

# ***The Road Ahead for the U.S. Auto Industry***



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## **Executive Summary**

### **Domestic Trends**

The U.S. market for cars and light trucks continues to be strong with sales of 16.9 vehicles in 2005, marking the sixth consecutive year with sales above 16 million units. GM and Ford's incentive programs last summer helped to reduce or clear the inventories of many 2005 models. However, when these programs ended last fall, sales fell. In addition, Hurricane Katrina caused gas prices to climb above the \$3 mark, and sales of larger vehicles, the Detroit 3's (GM, Ford, and the Chrysler Group) most profitable segment, plunged. Although light trucks still accounted for over half of the U.S. passenger vehicle market in 2005, sales declined. Conversely, passenger car sales grew for the first time since 2000. Although overall sales of SUV's declined, Cross Utility Vehicles (CUV) are becoming a popular segment. Sales of hybrid vehicles also grew to reach approximately 212,000 units in 2005.

The combined market share of the Detroit 3 fell from 73 percent in 1995 to 56.8 percent in 2005. The loss of North American profitability and the need to control legacy costs led GM and Ford to announce massive restructuring plans in late 2005 and early 2006. Meanwhile the foreign competitors continue to invest in U.S. auto assembly plants and watch their U.S. market share grow, with Japanese brands having a 32.3 percent share, and German brands having 1.6 percent in 2005. The Korean manufacturers, in particular, continue to make inroads in the U.S. marketplace with their market share growing from 2 percent in 2000 to 4.3 percent in 2005.

### **International Trends**

The U.S. auto trade deficit decreased in 2005, but remained high at \$101 billion. U.S. exports increased 20 percent and imports increased 1 percent, with a substantial portion of U.S. auto trade being intra-NAFTA. During 2005, imports from Japan increased, imports from Korea decreased (most likely due to Hyundai opening a U.S. production plant), and imports from Germany were flat. China overtook Japan as the second largest vehicle market in the world in 2005. GM gained the top sales position in China, displacing VW. China is important to the future of the Detroit 3 as both a growth market, and potentially a competitive threat in the U.S. market.

### **Outlook**

Market analysts are forecasting U.S. vehicle sales in 2006 to be similar to 2005. GM and Ford are in a fight for their lives as they begin implementing their restructuring plans and continue to battle for market share. Any turnaround will require the cooperation of their workforce and lessening the burden of rising healthcare and pension costs, not to mention avoiding a Delphi strike in GM's case. Overall U.S. auto sales were up 1.1 percent in the first quarter of 2006. However, both Ford and GM experienced sales declines in the first quarter of 2006, while the Chrysler Group and most of the Asian and German automakers saw increases. With oil prices increasing, consumers' interest in cars versus light trucks may also continue, which would also inevitably impact the Detroit 3's bottom line.

Notable developments in 2005 include:

## **Domestic Market**

- The U.S. market for cars and light trucks increased to 16.9 million units in 2005 – up 0.4 percent.
- Higher gas prices contributed to sales of light trucks declining almost 1 percent, while sales of passenger vehicles grew 2.2 percent.
- Cross Utility Vehicles' (CUV) popularity continues to grow, with sales increasing 34 percent in 2003, 16 percent in 2004, and almost 12 percent in 2005, reaching 2.2 million units.
- With sales volume increased, consumer expenditures for new vehicles continued to increase marginally from \$266 billion in 2004 to \$266.7 billion in 2005.
- Forecasters predict the 2006 market will likely mirror the 2005 market, with estimates averaging 16.7 million vehicles for 2006.
- Market shares for the Detroit 3 (GM, Ford, and the Chrysler unit of DaimlerChrysler) have fallen yet again to a new low, 56.8 percent of the 2005 market. Their volume dropped 2.6 percent.
- Market shares for the Japanese brands reached a new high, 32.3 percent. Volume increased 6.1 percent.
- German brands sales volume was down 1.3 percent. Market share also declined, falling to 5.1 percent.
- Sales volume of Korean brands increased 6.13 percent, and market share climbed to 4.3 percent.

## **Production**

- U.S. production of light vehicles was down slightly by 0.6 percent in 2005 to 11.5 million units. 1999 was the record high, 12.6 million units.
- Light vehicle production is expected to modestly increase over the next two years, rising from 11.5 million in 2005, to nearly 11.8 million units in 2006. This upward trend is expected to continue, with the 2008 forecast reaching the 1999 benchmark of 12.6 million units.
- Detroit 3 production decreased 6.9 percent to 7.6 million units.
- U.S. production by Japanese affiliates increased 12.6 percent to 3.5 million vehicles.

- U.S. production by the German affiliates was up 1.4 percent to 220,000 units.
- 2005 saw the arrival of the Korean manufacturer, Hyundai. By year's end it had produced 91,000 automobiles.
- Some analysts expect Detroit 3 production to contract further in 2006, their volume replaced by that of the local Japanese, Korean, and German affiliates, and by imports.

### **Employment**

- Domestic employment in the auto industry (light vehicle manufacturing) was down in 2005 to an average of 212,500 individuals, a decrease of 4.2 percent for the year.
- Auto manufacturing remains one of the economy's best paying industries. Production workers' average hourly earnings were projected to reach \$29.91 (excluding benefits) in 2005. Wages were 79 percent greater than the national average for all manufacturing industries.

### **International Trade**

- The light vehicle trade deficit decreased 4.4 percent in 2005 to \$101 billion, down from last year's record high.
- Imports increased 1.1 percent to a total of \$137.6 billion.
- Exports grew for the fourth year in a row, climbing 20.4 percent to \$36.2 billion.
- Imports from Canada were up 1.6 percent to \$44.1 billion and remain the largest source. Imports from Mexico fell for the fourth year in a row, down 2.7 percent to \$16.9 billion. Japan's exports to the United States increased by 9 percent to \$35.1 billion.
- Most U.S. exports continued to go to Canada and those shipments increased by 10 percent. Exports to Japan increased for the third year in a row by 10.2 percent to \$537 million. Shipments to Mexico increased by 11.3% to \$4.4 billion. Exports to Korea dramatically increased by 124 percent to \$116 million.
- There is no reason to expect the light vehicle trade deficit will decline in the near term.

# **The Road Ahead for the U.S. Auto Industry 2006**

## **Introduction**

Despite Hurricane Katrina and increased gas prices, 2005 was another good year in terms of overall U.S. sales. However, it was a difficult year for some of the individual automakers, particularly Ford and GM. The domestic automakers continued to face challenges such as a loss of U.S. market share to foreign competitors, high legacy and commodities costs, and consumer expectations of continued high incentives.

In 2005, U.S. light vehicle sales increased for the second straight year, totaling 16.9 million units, up 0.4 percent compared to 16.8 million units in 2004.<sup>1</sup> As gas prices reached more than \$3 per gallon in 2005, sales of SUVs declined 12 percent, and consumers became more interested in fuel-efficient cars. Light trucks still accounted for 54.7 percent of the U.S. passenger vehicle market in 2005, but sales fell to 9.25 million units, down almost one percent over 2004. Meanwhile, passenger cars' sales grew for the first time since 2000. Sales reached almost 7.7 million units, a 2.2 percent increase compared to 2004.

According to the Department of Commerce's Bureau of Economic Analysis (BEA), consumer expenditures on new vehicles shifted slightly in 2005. Spending on new trucks dropped for the first time since 1991, decreasing 2.3 percent from 2004 to \$164.6 billion. Expenditures on new cars, however, grew to \$102.1 billion, an increase of 4.7 percent compared to 2004.<sup>2</sup>

U.S. production of light vehicles declined in 2005, falling by 1.9 percent to reach a total of 11.5 million units. (Table 5) Sales of vehicles produced outside the NAFTA region continued to rise in 2005, but their share of the market dropped 0.10 percent to 20 percent of total sales. U.S. sales of vehicles produced in Japan reached 10 percent of the U.S. market in 2005, an increase of 0.3 percent; the share of imported German vehicles sold in the United States slightly declined to 3.6 percent of the market, a 0.1 percent decrease; and, the share of imported Korean vehicles remained the same, a 4.6 percent share.

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<sup>1</sup> Automobiles, station wagons, vans with not more than 15 passenger capacity, sport and cross utility vehicles, and pickups. All rated at not more than 10,000 pounds of gross vehicle weight.

<sup>2</sup> The industry includes sales of vehicles made within the North American Free Trade Area [NAFTA] as 'domestic' vehicles. Everything else in industry sales data is an 'import.' The industry defines an 'import brand,' as any line other than those of GM, Ford, or the Chrysler Group. Import brands include vehicles their parents produce in the United States. Note, however, that U.S. government trade data counts all vehicles made in Canada and Mexico (including those of GM, Ford, Chrysler, Honda, Nissan, Toyota, and VW) in its import tally ('true imports') for determining the balance of trade with other countries.

## Crystal Ball Shows Similar Sales Volume in 2006

Market analysts are forecasting U.S. vehicle sales in 2006 to be similar to 2005, which would make 2006 the seventh consecutive year with sales above 16 million units. An average of multiple analysts' views would put the market down slightly to 16.7 million units.

Many economic indicators for the coming year are mixed, as they were last year. Income is up, but so are debt levels and interest rates. Disposable personal income (DPI) was up 4.2 percent to \$9 billion in 2005. Per capita DPI reached \$30,429 in 2005, up 2.6 percent in current dollars, and up 0.4 percent in constant dollars.<sup>3</sup> The national unemployment rate ended the year at 4.9 percent, lower than the year's average rate of 5.1 percent, and below December 2005's rate of 5.4 percent. The last peak rate was 6.3 percent in June 2003. Data from the Federal Reserve Board shows that total consumer non-revolving debt, which includes automotive loans, was projected to reach \$1.36 billion dollars in 2005, up 3.2 percent from 2004's level of \$1.31 billion.<sup>4</sup> Interest rates on consumer motor vehicle loans at banks and auto finance companies were on the rise in 2005, and projected to average 5.45 percent for the year. For fourth quarter of 2005, they were projected to average 5.97 percent, up from fourth quarter 2004's level of 5.01 percent. According to BEA data, personal outlays for all non-mortgage interest payments reached \$206 billion for 2005, up significantly from \$186.7 billion in 2004.

The Labor Department's consumer price index (CPI) for new cars has fallen or stayed the same every year since 1997, but it rose almost 1 percent in 2005 to \$135.2. The index for trucks was also slightly up, reaching 145.3, up 0.2 percent for the year.<sup>5</sup> Population projections favor increased auto sales. According to the U.S. Census bureau, the U.S. population over 16 years of age is expected to grow by 2.5 million people in 2006.<sup>6</sup>

Participants at the December 2005 Federal Reserve Bank of Chicago's Economic Outlook Symposium expected economic growth to soften slightly in 2006, with GDP forecast to grow by 3.2 percent. Both short- and long-term interest rates are predicted to increase approximately one-half percent, and oil prices were expected to decrease to slightly above \$55 in 2006.<sup>7</sup> Although consumer's confidence in current conditions grew in January 2005 to its highest level in more than three years, consumers' outlook for the next six months was slightly less optimistic compared with December 2005.<sup>8</sup>

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<sup>3</sup> Current BEA data is available at: <http://www.bea.gov/bea/dn/nipaweb/SelectTable.asp?Selected=N>. Scroll to Section 2 and select Table 2.1 for Personal Income; Scroll to Section 7 and select Table 7.2.5B for "Motor Vehicle Output."

<sup>4</sup> See the Federal Reserve Board's monthly consumer credit report at: <http://www.federalreserve.gov/releases/g19>.

<sup>5</sup> Enter the BLS web site for access to the latest adjusted CPI numbers: <http://www.bls.gov/cpi/home.htm>. Select "Get Detailed CPI Statistics." Under "Create Customized Tables," select "Consumer Price Index – All Urban Consumers (Current Series)."

<sup>6</sup> The 16-64 year old group is expected to increase by nearly 4 million persons between July 2004 and July 2006. Census Bureau population projections may be viewed at <http://www.census.gov/population/www/projections/natsum-T3.html>

<sup>7</sup> [http://www.chicagofed.org/economic\\_research\\_and\\_data/index.cfm](http://www.chicagofed.org/economic_research_and_data/index.cfm)

<sup>8</sup> <http://www.conference-board.org/economics/consumerconfidence.cfm>

## **Rebates/Incentives Continue**

Beginning with GM's "Keep America Rolling" zero percent financing campaign in 2001 shortly after the September 11 attacks, the U.S. auto industry, particularly the Detroit 3, have continued to offer consumers high incentives and low to zero interest rate loans to prop up sales and market share. In 2005, the market continued to be incentive-driven. During the summer, U.S. automakers offered an "employee pricing" incentive program to all buyers. These incentives were highly successful and helped to reduce or clear the inventories of many 2005 models. However, when the employee discount promotions ended, sales fell. In the fall, GM and Ford attempted to transition from incentives to "value pricing," which reduced the sticker prices on the majority of their 2006 models to bring them closer to the consumer's actual transaction price. Unfortunately, sales continued to decline. High gasoline prices did not help matters, particularly for large pick-ups and SUVs. In October, monthly auto sales were at their lowest point in seven years.

Year-end promotions by the Big 3 as well as the Japanese automakers helped save the total sales volume for the year. Edmunds.com estimates industry's aggregate spending on incentives was \$42.6 billion in 2005, \$1.2 billion less than they spent in 2004. The average incentives for 2005 were estimated to be \$3,456 per domestic vehicle sold and \$1,109 per Japanese vehicle sold, a decrease of 4.1% and an increase of 21.0% over 2004, respectively. GM's average incentive was \$3,623 per vehicle sold; Ford's spent \$3,148; and, Chrysler spent \$3,510. Nissan spent an average \$1,769 per vehicle sold; Toyota spent \$961; and, Honda spent \$646. GM and Ford are hoping their new products, simple pricing, clearer brand differentiation, and new marketing campaigns will help them to rely less on incentives in the future.

Hurricane Katrina, which devastated the Gulf Coast in late August 2005, severely impacted the U.S. automotive industry. Gas prices immediately climbed above the \$3 mark nationwide, and sales of larger vehicles, the Detroit Three's most profitable segment, plunged. Katrina also damaged as many as 570,000 vehicles and over 200 dealerships in Louisiana, Mississippi, and Alabama. The National Automobile Dealers Association cautions that half of these damaged vehicles could be repaired and sold to unsuspecting dealers and consumers who are not aware of the vehicles' history.

## **Restructuring Plans**

GM and Ford are embarking on a variety of restructuring efforts aimed at restoring profitability in their North American operations. After earning \$3.7 billion in 2004, GM experienced its second-worst corporate loss in its history in 2005, losing \$8.6 billion. On March 16, 2006, GM announced it adjusted this loss to \$10.6 billion, primarily due to higher charges related to restructuring and Delphi's Chapter 11 filing. GM's worldwide automotive operations reported an adjusted loss of \$5.3 billion in 2005, compared to adjusted earnings of \$1.2 billion in 2004. The decline was principally driven by large losses in North America, partially offset by improved results in Europe and in Latin America, Africa, and Middle East region. GM's stock fell almost 53 percent over 2005

and on December 29, 2005, shares fell to their lowest point in twenty years, \$18.33. Ford also struggled financially, particularly in North America, but overall the company remained profitable. Although the company's total net sales and revenues grew to \$178.1 billion (versus \$171.7 billion in 2004), its annual net income declined almost 43 percent to just under \$2 billion (versus almost \$3.5 billion in 2004). Ford's worldwide automotive revenue for 2005 was \$154.5 billion, an increase of \$7.4 billion from revenue of \$147.1 billion a year ago. However, it lost \$1.6 billion on its North American auto operations.

After reviewing GM's and Ford's restructuring plans (summarized below), some industry analysts are skeptical the companies' plans are aggressive enough. They also caution that GM may not be able to escape bankruptcy. Any turn-around will also be dependent upon GM's and Ford's new products appealing to consumers, as well as the union's cooperation in implementing the restructuring plans. GM and Ford's future are also highly impacted by the financial struggles of auto parts makers Delphi (spun off from GM in 1999) and Visteon (spun off from Ford in 2000).

### GM

GM lost \$5.6 billion in North America in 2005. Its U.S. market share has declined from 28.1 percent in 2000 to 26.1 percent in 2005. On November 21, 2005, GM announced restructuring plans that include: closing four assembly plants, four stamping and powertrain plants, reducing production at three assembly plants, and eliminating 30,000 manufacturing jobs by the end of 2008. Over the last five years, GM's white-collar employees have been reduced 32 percent, and they will be reduced by a total of 40 percent by 2006. In addition, GM will close two parts processing centers in 2007. GM also plans to close a parts distribution center and convert another parts distribution center into a crash parts warehouse in 2006. These future closings are in addition to the April 2005 closing of GM's Linden, New Jersey plant, which manufactured the Chevy Blazer and GMC Jimmy, the May 2005 closing of the Baltimore, Maryland van plant, which produced the Chevy Astro and GMC Safari minivans, and the May 2005 closing of the 104-year old Lansing, Michigan car assembly plant, which produced the Pontiac Grand Am and Chevrolet Classic.

After all of these steps are implemented, GM expects its annual North American capacity will be 4.2 million units by 2008, a 30 percent reduction since 2002. Annual costs will be reduced by \$7 billion a year. GM also plans to trim \$1 billion in net material costs in 2006. GM's 2005 loss included \$835 million to pay for the costs of UAW workers laid off by the November plant cutbacks and placed in the jobs bank. GM announced further actions in February 2006 that included: a revised health-care benefit plan for salaried retirees in the U.S. that is expected to reduce the company's liability by about \$4.8 billion and its annual health-care expense by almost \$900 million before tax; planned restructuring of the U.S. salaried pension benefit plan; fifty percent reduction in the cash dividend paid to stockholders; significant reduction in salary for GM's chairman and senior leadership team; and, fifty percent reduction in compensation for outside board members.



## Ford

Ford's North American operations lost \$1.6 billion in 2005, a decline of \$3 billion from 2004. North American sales totaled \$81.4 billion, compared with \$83 billion a year earlier. Ford's U.S. market share continued to decline for the tenth straight year, ending with 17.2% in 2005, down from 22.8% in 2000. In the fourth quarter of 2005, Ford took a \$962 million charge related to its reductions in its automotive work force, which it trimmed by more than 10,000 last year. In October 2005, Ford bought back 23 unprofitable parts plants in the United States in Mexico for \$1.8 billion from its former subsidiary, Visteon, to keep the second-largest U.S. supplier from filing bankruptcy. Ford plans to close 14 of the plants and cut up to 30,000 hourly employees by 2012.

On January 23, 2006, Ford announced the framework for a 6-year restructuring plan for its North American automotive operations, the Way Forward, in order to restore profitability by 2008. To realign Ford's North American production capacity to match expected demand and reduce fixed costs, the company announced it would idle 14 manufacturing facilities, including seven assembly plants by 2012. Idling these plants will reduce production by 1.2 million vehicles, or 27 percent. Between 25,000 and 30,000 manufacturing jobs will be cut in addition to 4,000 salaried employees, reducing Ford's 122,000 North American work force by 28 percent. Half of the jobs cut will be through attrition, while the rest will be through layoffs. The automaker also plans to reduce its 53 corporate officers by 12 percent by the end of the first quarter of 2006. Ford named three assembly plants and two parts plants that will be idled by 2008, and named an additional plant that will be reduced to a single shift. Two additional assembly plants to be idled will be named by the end of 2006, and the remaining cuts will be announced later.

Other elements of the Way Forward plan include: reducing parts and material costs by \$6 billion by 2010; building a new low-cost manufacturing site in North America; strengthening the identity of the Ford, Mercury and Lincoln brands; using straightforward pricing on cars and trucks to avoid the need for discounts; stabilizing market share; leverage the company's global product-development resources and flexible manufacturing systems to bring new models to market faster; and, no longer giving investors earnings estimates, so the company can remain focused on long-term profitability. Employee buyouts and other restructuring elements could cost Ford approximately \$500 million in 2006.

The Way Forward plan builds upon Ford's ongoing Driving American Innovation campaign announced last fall, which will accelerate Ford's development of small cars, crossovers and hybrids. In addition to the Ford Escape and Mercury Mariner hybrids currently available for sale, Ford will introduce hybrid versions of the Ford Five Hundred and Mercury Montego sedans, as well as the Ford Edge and Lincoln MKX crossovers between 2008 and 2010. By 2010, the automaker plans to build 250,000 hybrids a year.

### DaimlerChrysler

Unlike Ford and GM, the Chrysler Group performed relatively well in 2005, earning a profit of \$1.8 billion, a \$100 million increase from 2004. Chrysler's sales increased 4.1 percent to almost 2.3 million in 2005, and its market share climbed 0.5 percent to 13.5 percent. Overall, DaimlerChrysler's profit rose 15 percent in 2005 to \$3.3 billion. Over the past three years, DaimlerChrysler reduced its workforce by 40,000, and it currently does not anticipate announcing any further manufacturing-related job cuts. The automaker continues to implement steps that will better leverage the DaimlerChrysler merger, which took place in 1998. On January 25, 2006, the automaker announced it would cut 6,000 white-collar jobs, or approximately 20% of its administrative staff, by the end of 2008. The aim of this initiative, which is expected to save the company about \$1.2 billion a year, is to remove management layers and encourage more collaboration between divisions. It is unclear where the cuts will take place, but it is expected that many will be at the Stuttgart, Germany headquarters.

On September 1, Chrysler's CEO, Dieter Zetsche, who led a turn-around for Chrysler over the past five years, replaced Jurgen Schrempp as DaimlerChrysler's Chairman of the Board and also became the head of Mercedes Car Group. It is hoped he can turn around Daimler's Mercedes-Benz, which has recently experienced lost market share and quality issues. Tom LaSorda, previously Chrysler's Chief Operating Officer, became the head of Chrysler. Chrysler is planning to introduce 10 new vehicles in 2006, and invest \$30 billion in its product program over the next five years.

### **Product Changes & New Investments**

In addition to GM and Ford's cutbacks and announced closings, they are making product changes, and continue to make investments in their U.S.-based assembly and component plants.

### General Motors

GM announced in February 2006 that it is investing more than \$545 million to upgrade five Michigan assembly and component plants in Pontiac (two sites), Ypsilanti, Romulus and Lansing. GM plans to spend \$163 million to retool its truck assembly plant in Pontiac for the production of the next generation Chevrolet Silverado and GMC Sierra full-size trucks later in 2006; \$138 million in its Lansing Grand River assembly plant to expand the body shop for future vehicle production; \$152 million in a transmission plant in Ypsilanti to increase capacity of GM's new rear-wheel drive six-speed transmission; \$60 million in its Romulus engine facility for various future engine upgrades; and, \$32 million in its metal stamping plant in Pontiac for innovative sheet hydrofoaming equipment for the Pontiac Solstice, Saturn Sky and future Opel roadster.

Moreover, GM announced in February 2006 that it will invest up to \$118 million to upgrade its GM Powertrain Baltimore Transmission facility in White Marsh, Maryland for building its new, rear-wheel drive two-mode hybrid vehicle transmission, and will create up to 87 new jobs. This transmission will go into production in 2007 and is the first light-duty integrated hybrid transmission to be designed and built in the United

States. It will be used initially in GM's full-size SUVs, the Chevrolet Tahoe and GMC Yukon. The hybrid-powered vehicles will be assembled at GM's Arlington, Texas plant.

GM also produces the only other U.S.-designed and built hybrid transmission: a heavy-duty two-mode transmission for urban transport buses, which began production in 2003. GM has provided nearly 400 hybrid propulsion systems, designed and built in Indianapolis, Indiana, for transit systems in 29 cities in North America and Yosemite National Park. GM begins 2006 with orders for an additional 216 hybrid bus systems to six U.S. cities. At the 2006 Washington DC Auto Show, GM announced that the first of 50 GM hybrid-powered buses manufactured by New Flyer Industries are beginning to roll into the Washington Metro Area Transit Authority fleet (WMATA). GM's hybrid technology offers greater fuel economy and reduced emissions than conventional diesel buses. In January 2006, GM also launched an ethanol image campaign to build awareness and market acceptance for ethanol/gasoline blended fuel (E85) vehicles. In 2006, GM will offer nine E85 flexfuel models, bringing an additional 400,000 E85 flexfuel vehicles into its fleet.

GM's Janesville, Wisconsin, assembly plant is reportedly receiving \$175 million to upgrade its body shop and general assembly area for a future product program. The work is to prepare the facility for GM's next generation fullsize truck program, codenamed GMT900. Production is scheduled to begin during the first quarter of 2006. (The plant, which opened in 1919 and employs about 3,900 people, produces the Chevy Tahoe and Suburban and the GMC Yukon and Yukon XL.) GM is also investing \$175 million at its Fort Wayne plant in Indiana for full-size pickup truck production. It is expected that the investment will primarily be used to upgrade the plant with new machinery, equipment, and special tooling in preparation for new vehicles. Fort Wayne currently builds versions of the Chevrolet Silverado and GMC Sierra pickup truck. Its workforce of around 2,900 built a total of 247,000 pickup trucks in 2004. The project is expected to add about 200 jobs at the plant.

In late 2004, GM also confirmed it would invest \$450 million at its Flint, Michigan, engine and truck assembly facilities: \$300 million to expand its Flint South engine plant (to build a new family of V-6 engines), \$150 million for fullsize pickup operations (retooling for the next generation). GM is also investing \$100 million to renovate its Wilmington, Delaware, assembly plant to prepare for 2006 Pontiac Solstice production. Solstice is the first vehicle from GM's all-new Kappa rear-wheel-drive small-car platform. To meet the demand for the Solstice, a third shift of production began in January 2006. The facility will also begin producing the Saturn Sky and a new Opel roadster in 2006, which will increase employment at the plant.

GM has also announced plans to invest \$200 million at its Fairfax, Kansas, assembly plant for production of an all-new Saturn midsize car, which is scheduled to begin production in the second half of 2006 as an '07 model. GM will use the investment to expand its facilities and upgrade machinery, equipment and special tooling for the new product. In August 2004, GM also approved plans for a \$400-500 million upgrade to its Saturn Corp. assembly plant in Spring Hill, Tennessee. The new tooling program will

allow the facility to produce the next generation Ion small cars and Vue CUVs, and brings the overall investment in Spring Hill to nearly \$4 billion.

GM is also focusing on increasing its manufacturing flexibility. For example, when it opens its new plant in Delta Township, Michigan in 2006, it will be equipped with a new manufacturing technology that allows vehicles based on different platforms to be built on the same assembly line. Called "Tru-Flex", the system is an extension of the C-Flex bodyshop technology GM currently uses at several assembly plants. By gaining the capability to build different architectures at the same assembly plant, GM will better utilize capacity, reduce plant investment and be able to react more quickly to market demands.

In August 2005, GM announced it would invest nearly \$30 million in its Wentzville, Missouri manufacturing complex to upgrade two presses in the plant's stamping facility. Wentzville builds the Chevrolet Express and GMC Savana fullsize vans. The investment will replace mechanical workings with electronic systems on two transfer presses. The upgrades began in late 2005 and will continue through 2007.

In October 2005, GM claimed an industry-first when it opened an accessory design center in Auburn Hills -- a center devoted to developing vehicle accessories. Set up with supplier Plastech Engineered Products Inc. in February 2005, the GM Accessory Design Studio (GMADS) employs 15 people who work with suppliers and the GM Design Center in nearby Warren, Michigan, to develop aftermarket parts during the vehicle development process. This is an effort to address the extra costs typically incurred when accessories have, in the past, been reverse engineered - after the completed vehicle is on the market. By utilizing a proactive approach, GM hopes to cut costs and improve customer satisfaction.

GM will also invest approximately \$20 million by early 2006 at its Shreveport, Louisiana truck assembly plant to increase production of the Hummer H3 midsize SUV, and the Chevy Colorado and GMC Canyon midsize pickups. To prepare for the increased output, the Shreveport plant will add a third shift to its paint department during January-March 2006.

#### Ford

During 2005, Ford confirmed that it would discontinue the Thunderbird 2-seat convertible following the '05 model year, although it left the door open for future versions of the model. Production of the vehicle at Ford's Wixom Michigan plant ended in July 2005; since that time, Wixom was identified as one of the plants Ford would permanently close. Moreover, the last Ford Excursion rolled off the line on September 30, 2005, at the company's truck assembly plant in Louisville, Kentucky, addressing the image of wastefulness. Ford plans to replace the Excursion with a stretched version of its Expedition SUV, which gets a redesign in 2007. Ford's assembly plant in Lorain, Ohio will be closed in 2006 - at a loss of approximately 1,200 jobs. The company's St. Louis, Missouri plant is still scheduled to close its doors at an undisclosed date in the future.

Nonetheless, investments are still planned. During 2004, Ford committed to make an investment in a Chicago-area Supplier Park, as well as its manufacturing facility there, which will result in 400 to 600 more jobs than originally expected. (Initial estimates called for about 1,000 jobs to be added.) The new jobs will bring Ford's Chicago-area employment to approximately 5,400 workers. The supplier campus provides more flexibility at Ford's Chicago assembly plant, which had previously produced the Ford Taurus and Mercury Sable, but is now producing the Ford Five Hundred and Freestyle and Mercury Montego. The facility will be able to produce up to eight models on two separate architectures. With these models, Ford hopes to become a leader in All-Wheel-Drive (AWD) technology, which offers customers more traction and stability. (Ford essentially has "built-in" reliability since most of the technology is already in use in related vehicles produced by its wholly owned Volvo subsidiary.)

Ford will also reportedly invest \$62 million in its 54-year old Buffalo, New York, stamping plant to increase output and widen the scope of parts the facility can produce. Ford began replacing a press line in early 2005 with a new press made by Germany's Schuler AG. The new press can run twice as fast, and will be operational by June 2006. Ford is also reportedly spending \$240 million over the next four years at its Wayne Assembly plant in Michigan to incorporate Focus hatchback production from a Mexico plant. Sedans and wagons are currently assembled at the Wayne facility. Ford also started production of the '06 Lincoln Mark LT luxury pickup at the new Dearborn Truck Plant in Michigan, where it currently builds the F-150. Ford is planning to build around 20,000 Mark LT's annually. AutoAlliance International, the Mazda Motor Corp-Ford JV, now builds the '05 Ford Mustang, bringing total employment to 3,300 workers. These employees were transferred from other Ford facilities that have been recently downsized or closed.

At the 2006 Washington Auto Show, Ford unveiled the Ford Escape Hybrid E85, a research vehicle combining two petroleum-saving technologies: hybrid electric power with flexible fuel capability. The automaker also recently announced that it would be the first to build hybrids in Canada when the Oakville Assembly Complex (OAC) adds hybrid versions of the Ford Edge and Lincoln MKX to its assembly line later this decade. Ford also received the "2006 Green Car of the Year" award for its Mercury Mariner Hybrid by the Green Car Journal. Ford hopes to increase its global hybrid production capacity 10-fold to approximately 250,000 vehicles by 2010. Ford was also the first company in the industry to issue a report addressing the business implications of climate change in December 2005. The report addresses how concerns about greenhouse gases, including CO<sub>2</sub> are linked to other factors affecting business.

## **Beyond the Big 2 – Investment Continues**

Recent transplant projects include expansions by each of the major Japanese and German manufacturers, and the arrival of the Korean manufacturer, Hyundai.

On February 2, 2006, Toyota announced it reached the 15 million mark in North American production. This milestone marked 20 years of manufacturing in North

America, supported by a \$16 billion investment in North American operations. By 2008, Toyota will have the annual capacity to build 1.83 million cars and trucks, 1.44 million engines, and 600,000 automatic transmissions in North America. The company's direct employment is 38,000, with a current investment of \$16.3 billion.

Toyota now operates 12 vehicle manufacturing, powertrain, and components facilities in North America. The automaker has two more North American plants under construction - - in San Antonio, Texas and Woodstock, Ontario. The San Antonio plant, scheduled to open in 2006, will produce Tundra full-size pickup trucks and employ 2,000. The Woodstock plant, scheduled to open in 2008, will be the sole worldwide production location for the RAV4 sport utility and employ 1,300. In June 2005, Toyota announced it is investing \$100 million in its Georgetown, Kentucky plant to begin producing the Camry Hybrid at its Georgetown, Kentucky plant in late 2006. The plant will have the capacity to build approximately 48,000 Camry hybrids vehicles a year.

Toyota also continues to localize parts production. For example, during 2005 Toyota announced that its Buffalo, West Virginia engine plant would begin gear production (which is currently done at a Toyota facility in Japan), in 2006. In May 2005, Toyota also announced that it would expand its Buffalo plant for a fifth time, adding 150 positions to the current 1,000, through a \$120 million investment. The engine and transmission plant is poised to build an additional 240,000 automatic transmissions a year starting 2007. Total automatic transmission capacity will rise to 600,000 annually. With the additional investment, Toyota will have spent \$920 million at the Buffalo plant, which produces 4-cylinder engines for the Toyota Corolla and Matrix; V-6 engines for the Toyota Sienna and Lexus RX 330; and automatic transmissions for the Toyota Camry, Solara, Sienna and Lexus RX 330.

Moreover, Toyota's Jackson, Tennessee engine-casting plant became operational during 2005, and its Huntsville, Alabama engine plant added capacity to meet North American demand. The Alabama plant supplies engines to Toyota's California and Mexico-built Tacoma compact pickup trucks, as well as the next generation Tundra fullsize pickup, to be built in Princeton, Indiana and San Antonio, Texas in late 2006. This plant already produces the V-8s for the current generation Tundra and Sequoia fullsize SUV, both built in Princeton. It has the capacity to produce 130,000 V-6s annually, as well as 120,000 V-8s. Toyota currently is expanding Huntsville to boost V-8 output, bringing total engine capacity to 400,000 units. Employment is more than 500 workers, and the expansion created more than 300 additional jobs.

In December 2004, Toyota announced its plans to consolidate its North American Engineering and Manufacturing into one company, called Toyota Motor Engineering and Manufacturing North America (TEMA). TEMA was officially launched on April 3, 2006. TEMA will operate three centers: the Toyota Technical Center will continue to direct R&D activities from Ann Arbor, Michigan; the Toyota Operations Center will oversee Toyota's manufacturing locations in North America from Erlanger, Kentucky; and the Toyota Planning Center will oversee planning and administration from Erlanger, Kentucky. TEMA will utilize existing facilities and workforces and there are no plans

for a new building to house the combined company. The workforce of the combined organizations, including manufacturing operations, will be approximately 28,000.

Toyota continues to collaborate extensively with other manufacturers. For example, in July 2005, it was reported that the Toyota and General Motors joint venture factory New United Motor Manufacturing Inc. (NUMMI) will receive a \$143 million upgrade over the next five years, focusing on improvements in its paint and assembly lines. On March 13, 2006, Indiana Governor Mitch Daniels announced that the Toyota Camry will be built at Subaru of Indiana Automotive, Inc. (SIA), directly creating about 1,000 jobs. The news is part of a collaborative agreement announced between SIA parent Fuji Heavy Industries Ltd. (FHI) and Toyota Motor Corporation (TMC), a FHI stakeholder. About \$230 million will be invested to install Camry manufacturing processes in an existing SIA line capable of producing about 100,000 vehicles annually. Camry production at SIA begins in Spring 2007. With this additional capacity and other expansions underway, Toyota will have North American annual production capacity of about 2 million cars and trucks by 2008. Camry production in Indiana replaces imports of the car. Toyota Motor Manufacturing, Kentucky (TMMK), which builds the Camry, will support SIA by providing training on Camry processes. Parts and materials for the Indiana-built Camry will be sourced and procured by Toyota.

During 2004, Honda celebrated the 25<sup>th</sup> anniversary of its first U.S. manufacturing plant located in Ohio. Honda is also responding to the growing demand for trucks in the U.S. market. For example, Honda Manufacturing of Alabama (HMA), located in Lincoln, is devoted to minivan and more recently, SUV production. In March 2005, HMA celebrated the completion of its 500,000<sup>th</sup> vehicle and V-6 engine. Total investment to date at this facility is approximately \$1.2 billion. HMA currently employs more than 4,300 workers, and is now the sole North American production source of the Odyssey minivan. In April 2004, HMA's Line 2 facility began production of the Honda Pilot sport utility vehicle (SUVs) and is now capable of building both Odysseys and Pilots on the same line. (Line 1 is dedicated to Odyssey production, but has reached full capacity at 150,000 units, so the Odyssey is also produced on Line 2, in order to meet demand.) Combined production on two assembly lines currently totals more than 1,100 Odyssey minivans and Pilot SUVs each day. At full capacity, HMA will produce a total of 300,000 vehicles and V-6 engines each year. Considering the differences between the two vehicles (a two-wheel drive minivan and a four-wheel drive SUV), this is a major manufacturing achievement.

Also during 2004, Honda demonstrated its manufacturing flexibility by shifting a portion of its Accord sedan production from its Marysville, Ohio plant, to its East Liberty, Ohio plant. Moreover, during 2005 Honda unveiled big plans for its Ohio auto plants. In 2006, it will begin production of the CRV SUV at East Liberty and an all-new Acura SUV at Marysville. Honda decided to move CRV production from the United Kingdom to the United States in order to meet increasing U.S. demand. CRV production will also continue in the U.K. to meet European demand. (However, in June 2005, Honda ceased production of the Accord at the East Liberty plant, in order to focus on the Civic and

upcoming CRV production). Honda also started production of its new sport utility/pickup truck, the Ridgeline, in Alliston, Ontario Canada, in early 2005.

Honda's localization of parts production also continues. For example, in November 2004, it announced plans to build a \$100 million plant in Tallapoosa, Georgia, to produce automatic transmissions as part of a broader North American Powertrain Strategy. (By May 2005, the plan was adjusted to meet growing demand by moving up the launch date of the Georgia facility from the Fall to the Spring of 2006.) The plan also includes significant investments to add production of high precision gears at a Honda transmission plant in Ohio, and key engine components at a Honda engine facility in Alabama. In all, Honda will invest nearly \$300 million and create 600 jobs across three states<sup>9</sup>. Honda's first U.S. powertrain operation—the Anna, Ohio Engine Plant, completed a \$20 million expansion in July 2003, adding a new assembly line that further increased its flexibility to produce both 4-cylinder and V6 engines. The Anna plant now has a capacity of 1.16 million engines per year. Together, Honda's Ohio and Alabama engine plants have annual production capacity of 1.46 million automobile engines and now supply all Honda and Acura vehicles produced in North America.

In August 2005, Nissan celebrated a milestone at its Smyrna Tennessee plant, which launched operations on June 16, 1983. The plant built its 7 millionth vehicle—an Aztec Red Frontier Cab SE. Nissan's success in the United States continues into the 2000's.

For example, in January 2004, the first U.S.-built Nissan Infiniti rolled off the line in Canton, Mississippi. By June 2004, Nissan built its first Altima at its expanded Canton, Mississippi plant. The addition, slated for 150,000 units annually, brings that plant's capacity to 400,000 units and supplements Altima production at Nissan's Smyrna, Tennessee facility. The Canton plant also builds the Titan fullsize pickup truck, the Quest minivan, and the Pathfinder Armada fullsize SUV.

In a move to consolidate its North American operations, Nissan announced in November 2005 that it would move its headquarters from Southern California to Nashville, Tennessee. Construction of the \$70 million Franklin headquarters will be completed by 2008. Nissan's manufacturing arm in Smyrna employs 6,700 and its powertrain plant in Decherd employs 1,300. It is unclear how many Nissan employees will make the move from California, with reports suggesting that as many as 80% may decline.

U.S. production by the German manufacturers has also been growing steadily. For example, in 2003, BMW and Mercedes assembled over 250,000 light vehicles in the United States, up 18 percent from the previous year. However, during 2004 this declined nearly 13 percent, totaling only 218,472 units.

Nevertheless, BMW has big plans for its sole U.S. plant in Spartanburg, South Carolina.

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<sup>9</sup> The Georgia plant will begin assembly in Spring 2006. At full capacity, the plant will employ 400 workers and assemble 300,000 5-speed automatic transmissions annually for initial use in Odyssey minivans and Pilot cross/utility vehicles. Each investment totals \$100 million and will add 100 new jobs.



BMW's assembly complex opened a process development center in December 2005, one of three construction projects ongoing at the facility. The \$3 million process development center is joined by a \$9 million testing center, scheduled to begin operation in the first quarter of 2006, and a 55-acre \$10 million parts logistics center that should be completed by mid-2006. Indeed, during 2005 BMW sold more vehicles in the United States than in its German home-market. BMW is therefore committed to the United States and North American market for future further growth. For example, in June 2005 BMW produced its 500,000<sup>th</sup> X5 SUV, and by March 2006, BMW had produced its 1 millionth vehicle at this facility. Moreover, the facility moved from a 2-line operation to a single line in early 2006, paving the way for production of another model in addition to the X5 and Z4 already built there. (This is particularly extraordinary in the manufacturing realm, since the X5 (a large SUV) and Z4 (a small roadster) are not built on the same platform.). BMW idled its plant in late 2005 to make the conversion, and resumed production in mid-January 2006, providing BMW with greater seasonal flexibility on model choices. It is uncertain which additional model(s) will be built, but since the 3 and 5 series are amply produced in Germany and South Africa, it is more likely the additional product(s) for this facility will be the X3 replacement or another Cross Utility Vehicle. Since its construction in 1993, BMW has invested more than \$2 billion in its Spartanburg facility to meet global demand. This facility currently has the capacity to produce 150,000 vehicles a year.

During 2005, DaimlerChrysler celebrated a new chapter at its 12-year old Alabama plant, since it has doubled its size, capacity, workforce, and product range, and has also won a coveted quality award, providing the promise of more new vehicles. Since 2001, DaimlerChrysler has invested \$600 million to expand its Tuscaloosa, Alabama plant and double capacity from 80,000 to 160,000 vehicles per year. (This investment brings total capital investment in Tuscaloosa to more than \$1 billion.) This plant was the first Mercedes passenger vehicle plant outside of Germany. The plant's workforce has grown from 1,900 employees to 4,000 by 2006 and has grown in size from 1.2 million square feet to more than 3 million square feet.

In late 2004, Mercedes ended output of its current-generation M class SUV, and the redesigned '06 M-Class began production shortly thereafter. Production of the new Mercedes-Benz R-Class Grand Sports Tourer began in mid-2005. There is also the expectation of a 7-seat M-Class down the road (the previous model had 5-seat and 7-seat versions and the new model was launched as a 5-seater only). Moreover, in July 2005, the company confirmed it will build its next-generation G-class cross/utility vehicle at this plant, ending that product's Graz, Austria production. The Alabama plant and affiliated operations represent a \$3.5 billion investment -- more than \$1 billion in the plant, and the rest in research and development for two generations of M-Class and the new R-class. State government incentives included \$253 million for the original plant and another \$119 million towards the \$600 million expansion. The U.S. operation will reportedly represent more than 20% of total revenue for the Mercedes Car Group.

In late 2005, DaimlerChrysler also began considering a Dodge Sprinter van production site in South Carolina which could entail a total investment of \$400 million, according to

state officials there. Of note is that the Sprinter would be assembled from complete-knocked-down kits exported from Germany.

For the second year in a row, the prestigious Harbour industry-consulting group, named the Chrysler Group as the most improved local automaker in manufacturing efficiency. As part of its continuing efforts to improve, the Chrysler Group announced in August 2004 that it plans to pursue an innovative manufacturing project in Toledo, Ohio, that will reportedly feature the most advanced use of supplier co-location yet in North America. Part of a \$2.1 billion total program investment, the project will produce a family of future cars for sale worldwide. The plan consists of co-locating three suppliers within the manufacturing plant -- specifically the body, paint and chassis operations. It is hoped that this flexibility will enable multiple products to be built on the same assembly line, as well as the ability to react quickly to changing market demands. This new Jeep plant is on schedule to open in early 2006. The three suppliers are: Haden International Group (paint shop), Kuka Group (body-shop operations) and Hyundai Mobis (which currently supplies the Hyundai Alabama plant and will provide the rolling chassis for this Chrysler plant). The Toledo North Assembly Plant will build the '07 Nitro—the Dodge brand's first mid-size SUV. The Nitro is expected to join the Liberty on the assembly line by mid-2006. Ultimately, Chrysler wants all of its assembly plants to have similar prototype production capability as a hedge against the pitfalls of ambitious product launch schedules.

Moreover, Chrysler is investing \$113 million to bring its popular Stow 'n Go seating and storage system to its St. Louis South assembly plant in Missouri. Having been made exclusively at its Windsor Ontario, Canada plant, Stow 'n Go minivans began production in St. Louis in early 2005. In addition, the all-new '05 Jeep Grand Cherokee rolled off the assembly line at Chrysler Group's Jefferson North plant in Detroit, Michigan, culminating three years of development and \$241 million in capital investment at that facility. The upgraded facility also began pilot production of the larger Jeep Commander SUV in late 2004. Based on the success of its rear-wheel-drive LX cars (Chrysler 300 Series and Dodge Magnum), Chrysler is also reportedly considering another LX plant to assemble future variants of the platform should demand remain high.

In February 2005, the Chrysler Group concurrently unveiled Dodge concept vehicles on both sides of the Atlantic, indicating its intention to expand Dodge into the global automotive market.

In March 2005, Chrysler announced a \$506 million investment at its assembly and stamping plants in Sterling Heights, Michigan, in preparation for its new D-segment passenger cars, jointly developed with Mitsubishi Motors Corp. As many as 500 new jobs will be added, bringing total employment to 5,600 workers. Chrysler will spend \$278 million to overhaul the body shop and improve the paint shop and assembly areas to make way for the replacements for the outgoing Chrysler Sebring and Dodge Stratus midsize sedans, as well as the Sebring convertible. Since the midsize vehicles will come from the same platform as the C-segment cars, Sterling Heights could also build the smaller cars, such as the Dodge Caliber that replaces the Dodge Neon. The plant will

provide vehicles for Chrysler, Dodge and Jeep brands. The adjacent facility will receive \$228 million in upgrades.

In May 2005 Chrysler also announced a \$297million investment in its Trenton, Michigan engine plant (TEP) for production of its all-new 4 liter (\$155 million) and redesigned 3.8 liter (\$142 million) V-6 engines, to be used in future Chrysler Group vehicles. The 2.1 million square foot TEP, employs 1,600 workers.

A sign of international collaboration can be seen in the recent January 2006 announcement regarding a formal agreement between the Chrysler Group and Volkswagen AG for Chrysler to build VW-brand minivans in the United States for the North American market. The new vehicles will be based on Chrysler's next generation minivan platform, codenamed RT, and will begin production sometime in 2008. Although Chrysler reportedly will manage the engineering, VW will manage its own interior and exterior elements. The VW vehicle will share powertrains with its Chrysler stablemates and is expected carry a slight price premium when it debuts shortly after Chrysler's new minivans are released. Chrysler's St. Louis South Assembly plant, which currently builds Dodge and Chrysler minivans for the domestic market, is expected to build the VW vehicles as part of a consolidation of Chrysler's minivan operations.

Volkswagen's luxury division, Audi, is reportedly considering building a factory in the United States. While there are no immediate plans, annual volumes could be as low as 50,000 units; but even at this low volume, anticipated plant investment would be between \$600 to \$800 million.

Korean manufacturer Hyundai is the newest arrival in the United States. Hyundai's Montgomery, Alabama plant opened in May 2005, and initially produced the all-new NF Sonata sedan. Total investment to-date is \$1.1 billion. The second model for this facility will be the next-generation Santa Fe CUV, which is expected to begin production in the second quarter of 2006. Hyundai's Mobis plant supplies an array of parts and modules needed in producing the vehicles, to include: front and rear chassis modules; cockpit modules; airbag systems; bumper systems; and, door-trim packages. Beyond this, Hyundai is reportedly considering a full-size pickup for the U.S. market. In addition, Hyundai has confirmed that it will introduce a hybrid model for the U.S. market before the end of the decade.

Hyundai's Ann Arbor, Michigan Tech Center opened during 2005 and represents a \$117 million investment over two phases, \$56 million of which is dedicated towards construction. Officials say that it is also expected to provide 85 new job positions during the first year, and potentially 750 more down the road. This facility will take the place of an older facility built in 1986 that was dedicated to emissions work on U.S. products. Therefore, this facility upgrade represents Hyundai's increasing commitment to this market.

Korean manufacturer Kia, (Hyundai has controlling interest in Kia), has stated that it would build a U.S. manufacturing plant by the time its annual volume hits 300,000 units

(Kia sales reached 270,000 units in 2004, up 14 percent from 2003). In March 2006, Kia announced it will invest \$1.2 billion in its first U.S. production plant, which will be located in West Point, Georgia. It is reportedly considering both fullsize pickups and sporty convertible segments for production. Looking for ways to brand differentiate, Hyundai will reportedly focus more on unibody frames while Kia will focus more on body-on-frame vehicles. The plant will begin production eventually in 2009, reaching full capacity of 300,000 units.

### **Rising Healthcare Costs are Making Detroit 3 Sick**

As the Detroit 3's market share continues to slide, much ink has been spilled over one of the companies' largest (and fastest growing) expenses - - health care costs. The health care benefits provided to the Detroit 3's workers, their families and the retirees are the result of negotiated contracts with the United Auto Workers. Generous health care benefit packages were negotiated by both sides when times were better for the Detroit 3 and foreign-brand competition was less fierce in the U.S. market. Long-term benefit payouts and advances in modern medicine have left companies like GM paying for more retirees than active employees.

GM spent \$5.6 billion in 2005 on healthcare (up from \$3.1 billion in 1997), and anticipates spending \$7 billion in 2006. The automaker has publicly pointed out on several occasions that it now spends more on health care per vehicle (approximately \$1,500) than it does on steel. Ford's health care expenses were \$3.6 billion in 2005 (up from \$2 billion in 1997), and DaimlerChrysler spent \$2.2 billion (up from \$1.2 billion in 1997). The Centers for Medicare and Medicaid Services reported that the overall cost of health care doubled from 1993 to 2004. No relief appears in sight. Total health spending is estimated to increase at an annual rate of 7.2 percent over the next ten years.

The root of the healthcare burden for the Detroit 3 lies in two parts – the rapidly rising costs (see above) and the heavy burden of legacy costs for retirees. General Motors currently provides for health care for 1.1 million Americans. However, less than 200,000 of those receiving benefits are current GM employees. The rest are either employee dependents or retirees. Ford and Chrysler have similar problems, as they now pay for the health care for approximately 550,000 and 375,000 individuals, respectively.

The foreign manufacturers do not face these same health care costs, giving them a large cost advantage. Nearly all competitors are based in countries that have national health care systems, giving these companies the benefit of a large number of workers for whom health care is already provided. Even those which have production plants in the United States do not face the same kind of legacy costs that the Detroit 3 have. They generally have a younger workforce and have far fewer retirees on the books. Nonetheless, as the number of their U.S. employees and retirees grows, international automakers with U.S. operations are concerned about rising costs. Nissan, who has approximately 500 U.S. retirees, recently announced it is taking steps to cut costs to “remain competitive” by limiting healthcare coverage for its U.S.-based retirees and no longer paying a guaranteed monthly pension to new hires.

The burden of U.S. healthcare costs is a cross-sectional problem that needs to be addressed at a national level. The Detroit 3 agree that some sort of federal government solution is needed. In a February 2006 speech, GM's CEO Rick Wagoner supported the establishment of a 'consumer driven' health system and advocated for a national plan to address catastrophic health expenses, which account for 30 percent of health care costs." The UAW is in favor of a single-payer national health insurance. In the meantime, the Detroit 3 and labor are taking steps to lessen the cost burden on the auto companies.

In October 2005, after six months of discussions, General Motors and UAW leaders reached an unprecedented agreement to cut its annual healthcare expenses by \$3 billion before taxes, and save the company about \$1 billion in cash annually. It is the largest single cost-cutting initiative ever announced by GM and the biggest labor concessions in the U.S. auto industry since the former Chrysler was on the verge of bankruptcy in the early 1980's. As part of the plan, GM's 118,000 active hourly workers will defer a \$1-an-hour pay increase in September 2006 to health coverage and pay larger co-payments for prescription drugs. GM's 500,000 retirees, surviving spouses and dependents will pay a larger share of their health insurance premiums. The agreement, which was approved by workers in November 2005, will reduce approximately \$15 billion from GM's future retiree healthcare liability, currently \$61 billion for hourly retirees and \$77 billion including salary retirees. The terms also include GM contributing \$1 billion in 2006, 2007 and 2011 to help fund a new Voluntary Employee Benefit Association. This fund will be administered by the UAW, and is intended to help ease the impact of GM's reductions in coverage for hourly retirees.

In December 2005, the UAW reached a similar deal with Ford that will reduce the automaker's health care expenses by \$850 million. UAW retirees will pay higher premiums and co-payments up to an annual maximum of \$752. Current employees will spend more on prescription drugs. In return, Ford committed to invest an additional \$900 million in product innovation and technology over the next five years. As of March 2006, DaimlerChrysler was still in talks regarding healthcare benefits with the UAW, and also was considering cutting back health care benefits for its salary employees. Each of the companies' agreements with the union will eventually require the approval of a federal judge.

### **Pension Costs**

Pension funds are another cost burden for the Detroit 3, particularly compared to their foreign competitors. The annual cost of pension obligations for the Detroit 3 is estimated to be at least \$2 billion. GM, with 500,000 retirees, has approximately 2-1/2 retirees for every active worker. Honda, which opened its first auto plant in the United States in 1982, only has approximately 1,500 U.S.-based retirees. Some analysts say that having to support a much larger number of retirees makes the difference in the Detroit 3's production costs relative to their competitors. In addition, in other markets, an automakers' responsibility for health insurance and pensions stops when an employee reaches retirement age. To help reduce costs and attract younger employees who prefer

their retirement money to be portable, the Detroit 3 have replaced pensions for salaried workers hired after a particular date with retirement savings accounts.

GM is currently disputing the federal government's claim that its pension fund is \$31 billion short of what it owes its work force and retirees (approximately 600,000). GM claims it has \$2 billion more than it needs to cover anticipated benefits. The New York Times reported that both estimates are within accepted accounting practices.

### **The Potential Impact of Delphi's Bankruptcy**

Since Delphi, the largest U.S. supplier, was spun off from GM in 1999, it has been at a competitive disadvantage. The supplier has continued to pay employees their same wages and benefits, which were much higher than Delphi's competitors. After failing to reach an agreement with its labor unions, or receive bailout money from GM, Delphi filed for bankruptcy in October 2005. The union has resisted Delphi's proposals for cutting wages, reducing the U.S. workforce, and reducing benefits. Based on a separation agreement GM made with the union in 1999, GM could face anywhere from \$5.5 billion to \$12 billion in various pension and health care liabilities for Delphi retirees if Delphi cannot provide for them. If an agreement cannot be reached and Delphi employees strike, it could certainly disrupt vehicle production for GM, Delphi's primary customer. As of March 2006, Delphi, the UAW, and GM were still negotiating.

### **Americans Still Love Their Trucks, but...**

Although Americans still bought over a million and a half more light trucks than cars in 2005, it appears higher gas prices, affordability, and shifting consumer tastes led to passenger cars' increase in popularity. It will remain to be seen if 2005 was the beginning of the end of America's love affair with trucks or if it was just a temporary shift. This trend could further disadvantage the Detroit 3, where profitability has depended on their dominance in the light truck segment.

Sales of light trucks in 2005 declined almost 1 percent with a volume of 9.25 million vehicles, while sales of passenger vehicles grew 2.2 percent to reach 7.67 million vehicles.<sup>10</sup> In 2005, light trucks accounted for 54.7 percent of the U.S. light vehicle market (a decrease of 1.4 percent over 2004), and passenger cars accounted for 45.3 percent (an increase of 1.7 percent). Sales of large cars grew a whopping 31 percent, and the small car segment grew 4.2 percent. SUV sales have been falling since 2001, and they dropped 12 percent to 2.5 million units in 2005, their lowest level since 1997. The Detroit 3's brands, which have 76.6 percent share of the SUV segment, were especially hard-hit, selling 15.5 percent fewer units compared to 2004.

Last year's decrease in the Detroit 3's light truck sales (224,579 units fewer than 2004) must be of concern. Over the past decade, they have derived an ever-increasing amount of their sales and profits from the increasingly competitive light truck market. While manufacturers can earn \$10,000 or more on the most popular light trucks, they often earn \$1,000 or less on passenger cars. In 2005, the Detroit 3 sold 6.4 million trucks (1996: 5.6 million), accounting for 67 percent of their total sales volume (1996 volume: 51 percent). Despite this volume increase over the years, the Detroit 3's share of the segment has fallen from 86 percent in 1996 to 69.6 percent in 2005. Meanwhile, the Japanese share of the truck market has increased from 13.3 percent of the segment in 1996 to 25 percent in 2005. GM is hoping a new full-size truck platform will help turnaround its sales in 2006, but consumers' increasing concern over fuel costs and increased competition could jeopardize their plans.

In 2000, the SUV category was subdivided by Ward's Automotive Reports to create a new category, Cross Utility Vehicles (CUV), which are, perhaps, best thought of as station wagons with (somewhat limited) off road capabilities, but exhibiting styling cues adopted and adapted from the traditional SUV category. While the overall sales of SUV's are declining, CUV's have become quite popular. Sales increased 34 percent in 2003, 16 percent in 2004, and almost 12 percent in 2005, reaching 2.2 million units and almost 13 percent of the U.S. light vehicle market.

As mentioned above, the increase in gas prices led to more consumers buying fuel-efficient vehicles. Sales of hybrid models have grown from less than 10,000 in 2000 to approximately 212,000 in 2005. Toyota's sales of the Prius gas-electric hybrid increased 100 percent in 2005 to 107,897 units. Honda sold 43,356 hybrid units of its Civic and the new Accord.

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<sup>10</sup> Industry sales data categorizes all vans, pickups, sport utility vehicles built on truck platforms, and 'cross-over' utilities built on car platforms as light trucks. (Cross-over vehicles are designed to look truck-rugged, but to ride car-soft). Light truck sales are defined by OAAI as being all of those with a gross vehicle weight not exceeding 10,000 pounds ('Classes 1 and 2'). Note, however, that the Harmonized Tariff Schedule nomenclature adopted by most governments, including the United States, for tracking international trade, places everything listed above – except for pickup trucks – in the passenger vehicle category.

## **Detroit 3 vs. Foreign Rivals**

As the U.S. market becomes increasingly competitive, Detroit 3 sales are on a long-term downward trend, likely pushing them below half the market in the near future. The combined market share of the Detroit 3 fell from 73 percent in 1995 to 56.8 percent in 2005. Some industry forecasters predict the Detroit 3 share to fall to near 50 percent within the next five years. A loss of one percent in market share is the equivalent to approximately 168,000 fewer unit sales and one assembly plant's output. American brands' share of all light truck sales fell from 86.3 percent in 1995 to 69.6 percent in 2005. Broken down by segment, in 1995 the Detroit 3 achieved 86 percent of the pickup market, 93 percent of the van market, and 80 percent of all SUV sales. In 2005, they supplied a little less of the pickup segment (84 percent), significantly less of the van segment (69 percent), and slightly less of the SUV segment (76.6 percent). The American brands supplied 75 percent of CUV's in 2000, and 41 percent in 2005.

American brands have seen their sharpest declines in passenger car sales, where they have been losing both sales volume and market share. They supplied 72 percent (8.2 million units) of the passenger car market in 1986. As foreign competition increased and the Detroit 3's attention gradually turned to SUV's and light trucks, volume and share have fallen nearly every year since (and have dropped every year since 1993), dropping to a 41 percent share in 2005 on a volume of 3.2 million cars. The Detroit 3 have lost share in each of the passenger car segments. American brands accounted for 69 percent of all small cars in 1986, but just 35 percent in 2005. Their share of mid-sized cars has slipped from 70 percent to 44 percent, while their luxury car share has fallen from 58 percent to 26 percent. One bright spot for the American brands has been the fourth category – large passenger cars – where they maintain 76 percent market share. This segment had a 31 percent sales growth in 2005, but still only accounted for only 9 percent of the total car market. The Japanese share of this segment has grown from 13 percent in 2003 to 23.8 percent in 2005.<sup>11</sup>

The net effect of declining shares for the American brands in light trucks (even though their volume has increased up until 2005), combined with declining shares (and declining volume) in the passenger car segments, is a steep drop in the Detroit 3's overall share of the U.S. market. (Chart 4) In 1965 their share exceeded 95 percent. In 1986, their position was 73.6 percent. In 2005, they accounted for just 56.8 percent of the overall market, a 1.7 percent decrease from 2004, and an 8.6 percent decline since 2000. The trend shows every indication of continuing. Their overall sales in 2005 fell 2.6 percent for the year to 9.6 million units, after having declined in the four previous years. Perhaps bucking the longer-term trend, Chrysler experienced strong sales for the second year in a

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<sup>11</sup> OAAI relies upon Ward's Automotive Reports for most of our industry sales and production data, and for product classifications. Wards re-categorized the Mitsubishi Diamante and the Toyota Avalon for 2003, moving both to the large car category based on their pricing and physical size. This will result in diminished shares for the American brands in the future. Had this occurred in 2002, the American brand share would have been 85 percent.



row, outpacing overall market growth with a 4.1 percent increase for 2005 – the only one of the Detroit 3 to post a gain. Chrysler's market share reached 13.5 percent, up from 13 percent in 2004.

### Japan

The Japanese brands' share (including both imports from abroad plus units produced within NAFTA) of the U.S. market rose by 1.7 points (same as last year) to 32.3 percent in 2005, on a volume that had increased 6.1 percent to 5.5 million units. (1986 share: 20.6 percent.) Japanese light truck volume inched up again in 2005, reaching 25 percent of that market, up almost 106,000 units over 2004's truck sales. This increase marked ten consecutive years of increasing Japanese brand market share in the light truck sector (beginning in 1996), putting increasing pressure on the Detroit 3 in this key market segment. Toyota's sales increased 9.7 percent last year, Nissan's increased 9.2 percent, and Honda's sales grew by almost 5 percent. However, it wasn't all positive for Japanese brands. Mitsubishi sales continued to decline for the third year in a row, with a decrease for the year of 23.3 percent. Mazda experienced a 2.1 percent decline with sales of 258,339. Isuzu sales declined 55 percent with sales of only 12,177 vehicles, leaving some to wonder if the automaker will remain in the U.S. market.

Japanese brands shares of the passenger car segments also have increased. In 1986 their overall share was 20.5 percent. It has risen in almost every year since, growing 1.9 points in 2005 to 41.2 percent. Both Honda and Toyota outsold Chrysler in the U.S. passenger car market for the first time in 1997, supplying 10 percent and 9.9 percent of sales, respectively, compared with 8.9 percent for Chrysler. In 2005, Toyota ranked second overall behind GM, with sales of 1,289,356 passenger cars, edging out Ford-brand sales (including Volvo and Jaguar) of 1,038,876 passenger cars. Without Volvo and Jaguar, Ford passenger car sales in 2005 totaled 934,832 units. Honda's 10.9 percent share ranked fourth with sales of 837,822 passenger cars. Nissan came in fifth, with 7.5 percent of passenger car sales. Chrysler was sixth with a 6.9 percent share. In light trucks, Honda's share increased slightly to 6.7 percent. Nissan increased its light truck sales by 12 percent, to reach 5.4 percent of the market. Chrysler easily remained the market's third largest truck supplier (behind GM and Ford) with a 19 percent (slightly up from 18.4 percent) share, after peaking in 1996 at 24.8 percent.

Industry data show that the portion of the Japanese brand sales that are supplied from their NAFTA plants rose steadily after 1986 (when they accounted for just 11.8 percent of their total), until reaching 67.4 percent in 1996. After that year, however, sales of non-NAFTA manufactured Japanese brands began to increase at a faster rate, resulting in the decline of the NAFTA-sourced share of their sales to 63.8 percent in 2001, and to 62 percent share in 2002. This happened even as Japanese producers began adding significantly to their NAFTA capacity and production. It appears the trend has reversed again. In 2003, the share of Japanese brand sales from NAFTA plants was back up, increasing to 63.9 percent. In 2005, it reached 68.1 percent.

### Germany

Sales of German brands have leveled off over the past couple of years after a decade of advancing rapidly. After selling 206,000 light vehicles and having a 1.5 percent market share in 1993, their sales increased by an average of 92,500 units per year, reaching 853,000 in 2000. They added 28,400 vehicles to their annual total in 2001, and followed up with an additional 33,300 in 2002, producing a volume of 915,000 units and yielding their highest market share in over a decade – 5.4 percent. (1986 share: 3.1 percent.) In 2003, German brands began to experience a setback for the first time since 1993, with a decline of 0.2 percent, and a decline of 3.3 percent in 2004. Their sales continued to decrease in 2005, down 1.4 percent to 870,283 units, and a market share of only 5.1 percent (down from 5.5 percent in 2003). The light truck market has been a growth segment for German brands, exploding from just under 1,000 units in 1996 to 148,000 units in 2004. However, in 2005, they fell slightly to 144,000 units, but maintained a 1.6 percent share of the market. Of the four German manufacturers selling passenger cars in the United States, only Volkswagen experienced a decline in sales in 2005, with market share dropping below 2 percent for the first time since 1999.

### Korea

U.S. sales of Korean cars and light trucks have increased sharply, bolstered by low prices, long warranties, and by an increasingly broad product line-up with markedly improved capabilities, quality rankings, and safety ratings. Sales have grown from 173,000 in 1998 to 731,000 in 2005, with a 2005 market share of 4.3 percent. Sales of light trucks by the Korean automakers have more than doubled since 2001, reaching a total 258,510 units and a market share of 2.8 percent. However, passenger car sales decreased 4.6 percent in 2005 for a total of 524,934 units and a 6.8 percent market share. Hyundai has a goal of selling 500,000 vehicles in the United States in 2006, and a million by the end of the decade. Kia aims to sell 500,000 vehicles per year by 2010.

### **New Products/Technology in the Market**

Increased global competition has led to more innovation by the automakers and additional choices for consumers. Global Insight Inc. estimates the number of car models being offered in the United States will increase to 330 by 2008, up from 250 in 1999. With more competitors in the market and increased competition, there are now a variety of small-volume, niche vehicles attempting to meet the diverse needs of consumers and families. The average annual sales per nameplate decreased from 106,819 in 1985 to 48,626 in 2005.

In addition to more choices of models, there are now more features as well. New advanced active safety features and electronics, such as intelligent cruise control, electronic stability controls, and crash avoidance systems, continue to be introduced. McKinsey & Co. predicts electronics will jump from 20 percent of the cost of building a car today to 40 percent by 2015.

One vehicle segment whose popularity continued to increase during 2005 was cross-over vehicles. Demand has grown rapidly for these more upright, more versatile, and more

comfortable vehicles that combine the best attributes of passenger cars with the cargo carrying capacity and ruggedness of sport utility trucks. The new breed of cross-over vehicles first appeared in the offerings of the foreign affiliated manufacturers in 1997-98. Honda's CRV, Mercedes' M-Class, Subaru's Forester, and Toyota's RAV4 are early examples. Additional offerings followed quickly, including Ford Escape, Pontiac Vibe, DaimlerChrysler PT Cruiser, Volvo Cross Country, and Subaru Baja. By December 2005, there were 41 different models on the market, compared to just 14 five years ago.

Automakers continue to invest billions in developing fuel-efficient vehicles with cutting edge technologies. It is clear that a significant market is emerging for vehicles with reduced environmental impact, so long as they do not compromise operating economy, comfort and performance, driving range, or price. Helping to foster their demand are rising gas prices, technological breakthroughs, and state (especially California) and federal government efforts to improve both emissions and fuel economy. New federal tax credits that began on January 1, 2006 are aimed at encouraging consumers to buy advanced technology vehicles. In President Bush's February 2006 State of the Union address, he called for increased U.S. energy independence, and urged Congress to support the development of hybrid and hydrogen-powered vehicles. He would also like additional research for developing new methods for producing ethanol, as well as developing battery technology.

The U.S. Department of Transportation, administrators of the federal corporate average fuel economy (CAFÉ) regulations, raised the bar for light trucks from 20.7 mpg for model year 2004, to 21.0 mpg in 2005, and an additional 0.6 mpg in 2006 and in 2007. In March 2006, DOT announced new fuel economy standards for light trucks in the 2008-2011 model years, and for the first time the regulations include light trucks exceeding 8,500 pounds. The standard will be 24 mpg by 2011. After a three-year transition period beginning in 2008, all new light trucks will be required to meet miles per gallon targets based on six vehicle size categories. The state of California's new tough vehicle emission standards, approved in 2004, are being adopted by other states as well. The regulations will be phased in beginning in 2009, and by 2016 all new cars and light trucks must be in compliance. The automakers have filed suit in a California federal court to try to block the new rules, claiming the states lack the authority to regulate fuel economy, and the regulations will add \$3,000 to the cost of a new car.

Hybrid vehicles have become the first advanced technology of significant interest to American consumers. J.D. Power estimates hybrid sales will increase to 780,000 by 2012 with 52 models being offered. Hybrid power systems combine small gasoline or diesel engines with battery packs and electric motors. The Detroit 3 have been working hard to catch up to Honda and Toyota – the market leaders – in this category. The U.S. automakers initially expressed doubts about recouping the high cost of development, and chose to focus more attention (and R&D budgeting) on longer-term advanced technology such as hydrogen fuel cell engines. These same high costs make it difficult for the smaller automakers to enter this market.

In 2005, Toyota offered three hybrids - - the Toyota Prius, the Highlander, and Lexus RX400h sport utility vehicles, while developing an additional ten hybrid models. The automaker expects to sell 600,000 hybrid vehicles annually in the United States early in the next decade.

GM's first hybrid vehicle, the Saturn Vue Green Line SUV, is expected to go on sale in the summer of 2006. In February 2006, GM announced it is investing \$118 million in its transmission plant in Baltimore to make a gas-electric hybrid system for two of its full-size SUVs, Chevrolet Tahoe and GMC Yukon. GM will be the first automaker to build and design mass-market hybrid transmissions in the United States. Production will begin in 2007. The hybrid system is the collaboration with BMW and DaimlerChrysler. Chrysler will use the technology in its 2008 Dodge Durango full-sized SUV. The system, which is expected to add 25 percent fuel efficiency to the trucks, will use two electric motors – one to power the vehicle at low speeds with light loads and the other to assist during highway speeds and while towing or on steep hills.

In 2004, Ford began sales of a hybrid version of its 'Escape' Cross Utility Vehicle. A Mercury Mariner hybrid was introduced in 2005. Ford expects to offer hybrid versions of more than half of its vehicles by 2010.

DaimlerChrysler, an advocate of biodiesel, would like to see more government incentives for biofuels and electric-drive vehicle technology. DaimlerChrysler has placed 1.5 million flexible fuel vehicles that use an 85 percent blend of ethanol on the road since 1998.

Another technology that promises to revolutionize the motor vehicle industry is 'fuel cell' power systems. Similar in concept to the technology employed by NASA to provide electric power on the space shuttle, fuel cells produce electricity through a chemical reaction involving hydrogen and oxygen. The electricity energizes motors that turn the vehicle's road wheels. The concept is so promising that an earlier joint project (the Partnership for a New Generation of Vehicles, PNGV), begun in 1994 between the American industry and the U.S. government to develop a five passenger, low environmental impact, 80 mpg motor vehicle, was replaced in January 2004 with the five-year \$500 million 'Freedom CAR' (CAR = Co-operative Automotive Research) project and the companion five-year \$1.2 billion Hydrogen Fuel Initiative. For more information, please see: <http://www.eere.energy.gov/vehiclesandfuels/> and <http://www.eere.energy.gov/hydrogenandfuels/>

FreedomCAR is focusing on perfecting fuel cell technology, attempting to drive down the 3-to-1 cost advantage now enjoyed by the conventional gasoline engine-transmission powertrain. The target is a power package no more expensive to produce, no more complicated to service and refuel, and no less powerful – but with significantly better fuel economy (perhaps, 100 miles per gallon equivalent) and much lower emissions. In fact, if pure hydrogen is used the only byproduct is harmless, potable water vapor. Because fuel cells involve no moving parts, and their companion electric motors just a few – compared with hundreds of components in a conventional engine and transmission – fuel

cell vehicles (FCVs) promise both greater reliability and longevity, as well as greatly reduced manufacturing complexity. Heavy foundry work (as well as their emissions) and complex machining operations will be greatly reduced, and the industry's consumption of steel and cast iron should contract significantly.

Proof-of-concept FCVs already have been assembled not only in America, but also in Europe and Japan. A small number are now on public roads, being used for validation and demonstration purposes. GM aims to have a commercial fuel cell system by 2010. The automaker has already spent \$1 billion in its development. In March 2005, GM and the Department of Energy signed a five-year, \$88 million agreement to build a 40-vehicle fuel cell fleet and further develop the technology. DaimlerChrysler manages a fleet of over 100 fuel cell vehicles around the world.

Even assuming all the technical issues in fuel cell engines are resolved (including limited range, extremely high costs, remaining difficulties in starting in cold weather), there are other problems waiting in the wings. One of the major obstacles for GM, along with every other manufacturer working on fuel cell driven vehicles is the development of a hydrogen infrastructure. There are many independent, and sometimes overlapping projects underway to help with this development. Both Florida and California have publicly stated goals to be leaders in the development of infrastructure, with both states working with Chevron to break ground on hydrogen refueling stations. GM is working with Shell to create an "East Coast Hydrogen Corridor," setting up refueling stations in Washington, D.C. (already open), New York and a location to be named between the two. Still, costs of a national system are daunting, with estimates as high as \$40 billion. GM estimates it would cost \$12 billion for the 12,000 hydrogen stations in the United States to make it possible for customers in the 100 largest metro areas to have to drive no more than 2 kilometers to fill up.

Other initiatives are taking place to try to increase fuel efficiency. In May 2005, the U.S. Department of Energy and the U.S. Council for Automotive Research (USCAR) announced a \$70 million, five-year agreement to develop lightweight, high-strength materials aimed at improving fuel efficiency by reducing a vehicle's weight, without sacrificing safety. This agreement was followed up by additional agreements in July 2005 with investments of an additional \$125 million for continued research and development in lightweight materials and advanced vehicle battery technologies.

Proponents for diesel engines claim this technology is more widely available, and can reduce oil consumption more quickly and cost effectively than hybrids and ethanol. While diesel engines account for approximately half of the European market, they have not been popular in the United States, accounting for less than 1 percent of cars and light trucks. Some of the reasons for this discrepancy are U.S. fuel's higher sulfur content compared to Europe's fuel, strict U.S. air pollution regulations, and tax advantages making diesel fuel cheaper versus gasoline in Europe. Five states, including California, do not even allow sales of new light vehicle diesels. In addition, U.S. consumers have not been interested because they remember the noisy, smoky, unreliable diesel engines of the 1980's. However, new federal rules require low-sulfur diesel fuel to be sold in the

United States by the fall of 2006. This change, combined with improvements in diesel technology, could allow diesels to meet the new restrictions requiring diesel and gasoline engines to meet the same tough emission standards that will begin to be phased in by the 2007 model year.

Because diesel engines can now provide 25 percent more fuel-efficiency and more torque at lower rpm than gasoline engines, automakers are betting that U.S. consumers, weary of higher gas prices, will give them another chance. In fact, five automakers announced plans at the North American International Auto Show to introduce diesel engines in their vehicles. J.D. Power and Associates' research predicts more than twice the amount of diesel powered vehicles will be sold in the United States by 2012. The Environmental Protection Agency estimates that if one-third of U.S. light vehicles had diesel engines, it would save 1.4 million barrels of oil per day in the United States, the amount of oil the United States currently imports from Saudi Arabia. Some of the challenges of future diesel sales include: the additional costs associated with developing the technology to comply with state and federal emission standards long-term, the availability of low-sulfite fuel, and overcoming diesels' reputation with consumers. To help offset the added costs to consumers, Congress' 2005 energy legislation included tax credits of up to \$3,400 for buyers of clean diesel vehicles. However, none of the light-duty diesels currently on the market qualify for the credits because of their emissions.

### **Production Dips Again, but Everyone Keeps on Trucking**

Twelve manufacturers produced cars and light trucks in the United States in 2005 – BMW, DaimlerChrysler, Ford, General Motors, Honda, Hyundai, Isuzu, Mazda, Mitsubishi, Nissan, Subaru, and Toyota. In 1999 production reached an all time high of 12.6 million vehicles. Volume dipped to 12.4 million vehicles in 2000, before skidding to 11.2 million units in 2001 on the heels of the terrorist strike and industry efforts to control inventory. In 2002, production gains were sufficient to generate the third highest volume on record – 12 million units, an increase of over 7 percent for the year. However, 2003-2005 saw declines. Production for 2005 declined slightly by 0.6 percent to 11.5 million units. (Table 5)

In 2003 the Big-3's share of U.S. passenger car production fell below 60 percent for the first time, accounting for only 57 percent. By 2005 it dropped to 47.7 percent. (In 1986, U.S. producers accounted for nearly 95 percent of car production.) Conversely, in 2003 the Japanese broke 40 percent for the first time, accounting for 41.8 percent of the total car production market. In 2005, Japanese producers claimed 49.7 percent of U.S. car production. (In 1986, Japanese producers accounted for only 4.1 percent of the car market.) Moreover, while the U.S. producers remained dominant in light truck production, their share slid from nearly 84 in 2003 to 77.7 percent in 2005. The Japanese are making steady inroads into the truck segment, reaching 19.5 percent of production in 2005 (up nearly 20 percent from the previous year).

## **Plant Capacity Stable, Utilization Rates Down**

Industry data show that U.S. light vehicle manufacturing capacity – the number of units that can be built annually – increased over the last decade, up from 12.5 million units in 1994 to 13.4 million units in 2004, due primarily to expansion by the Japanese affiliates – an expansion that is slated to continue. For example, Toyota began production of pickup trucks in late 2004 at its new plant in Mexico, and is scheduled to begin production at a new facility in Texas by the end of 2006. In early 2005 Toyota announced plans for a possible seventh North America production plant.

Industry data show that average straight time vehicle assembly plant capacity utilization rates in the United States have routinely exceeded 80 percent, and are often closer to 90 percent. Some plants routinely run at over 100 percent of capacity (through the use of overtime, extra shifts, etc.). Data in the annual Harbour Reports show that as light vehicle production was peaking in 1999, the average car plant utilization rate exceeded 87 percent and light truck plants approached a rate of 105 percent. In 2000, the industry's rate was 90 percent in the car plants and 99 percent for light truck plants. Harbour reports that utilization rates then declined in 2001 – cars dropped to 80 percent; trucks to 87 percent. However, in 2002, rates were back up, with car plants at 87 percent and light trucks at 92 percent. In 2003, utilization rates at car plants dropped almost ten points, falling to only 78 percent. Capacity utilization at truck plants was up slightly in 2003, reaching 94 percent. In 2004, capacity utilization continued to fall. The overall U.S. average was 85 percent, with car plants at 76 percent and light truck plants at 91 percent.

These mathematical averages hide large differences among individual plants. Some facilities are grossly underutilized, while others run at herculean rates that are neither sustainable, nor conducive to maintaining product quality or employee morale. Harbour reports significant variances among productivity levels in the American, Japanese, and German manufacturers' car and light truck plants in the United States. (Chart 7)

The Federal Reserve Board (FRB) also measures plant capacity utilization. By FRB measures, plant capacity utilization (for autos and light trucks [NAICS 33611]) ranged from the high 70's to the low 80's in 2005. However, by December 2005 the rate was down to only 72 percent, the lowest level measured by the FRB since July of 1998. For the entire industry including automotive parts (NAICS 3361-3) the FRB measured capacity as slightly higher than for the light vehicle segment alone, ending the year at 76 percent.<sup>12</sup>

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<sup>12</sup> The Federal Reserve Board constructs estimates of capacity and capacity utilization for industries in manufacturing, mining, and electric and gas utilities. For a given industry, the capacity utilization rate is equal to an output index (seasonally adjusted) divided by a capacity index. The Federal Reserve Board's capacity indexes attempt to capture the concept of *sustainable maximum output* – the greatest level of output a plant can maintain within the framework of a realistic work schedule, after factoring in normal downtime and assuming sufficient availability of inputs to operate the capital in place. For details see: [http://www.federalreserve.gov/releases/G17/cap\\_notes.htm](http://www.federalreserve.gov/releases/G17/cap_notes.htm)

## **Employment**

Direct employment in the domestic motor vehicle assembly industry (NAICS 33611) was down in 2005 to 212,500 employees (down 4.2 percent from 2004). This number has slipped considerably from its most recent highwater mark of 251,300 persons in 1995. (Table 8) While American vehicle assemblers restructure and reduce their workforces to reflect their declining share of the domestic market, foreign automakers continue to add to their U.S. employment rosters as their U.S. production increases, but their additions will not offset the Detroit 3's reductions.

Accompanying the decline in the industry's employment has been the steady improvement in efficiency on their production lines, but not in the 'back office' of management, marketing, and engineering. According to Bureau of Labor Statistics' data, productivity gains – measured as the number of vehicles assembled per production worker – have increased sharply, rising from an average of 44.1 in 1990 to 67.6 in 2005, a gain of 53 percent. When measured only against salaried worker employment, however, the trend is in the opposite direction – dropping from 415.6 units to 271.1 units, a 34.79 percent reduction. The net effect has been to limit the overall, corporate productivity gain to an increase of 35.6 percent spread over 15 years, growing from 39.9 units per employee to 54.1 units. Put more directly, while production employment has declined by 20.1 percent from 214,900 workers in 1990 to 166,070 in 2005, salaried employment has increased by 85.2 percent, growing from 22,900 in 1990 to 42,400 in 2005.

While the number of employees in the industry shrinks, the remaining jobs continue to pay well. (Table 9) According to the U.S. Census Bureau's 2002 Economic Census, wages alone were worth \$12.9 billion in 2002, while fringe benefits added an additional \$7.4 billion to the total earned by all employees in the car and light truck assembly industry. The Department of Labor's Bureau of Labor Statistics data also indicate that motor vehicle production workers (NAICS 33611) remain among the highest paid in the U.S. economy. Their average hourly rate (excluding benefits) was \$29.91 in 2005, 79 percent higher than the average wage for all manufacturing workers.

## **Trade Overview**

2005 will be remembered for several milestones in the automobile world, the opening of Hyundai's first U.S. production facility, the first Chinese car on display at the Detroit Auto Show, and Toyota overtaking Ford as the second largest automaker worldwide. These are all indications of the increasing competitive pressures being faced by the traditional U.S. automakers. There are, however, some positive developments in U.S. automobile trade. Exports are up, and imports are not increasing as fast as they once were. While the United States still has the world's largest vehicle deficit, it shrank by 4 percent to \$101 billion in 2005.

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There are several reasons that explain this. As the world's largest single market, the United States naturally attracts attention. The United States serves as a magnet for shippers from approximately 50 countries that face no non-tariff barriers in the United States, and duty rates that have only a limited impact. In addition, a number of foreign governments have created and promoted export-oriented economies. Thus, U.S. imports won't be dramatically decreasing in the near future.

In addition to attracting imports, the United States has attracted investment. German, Japanese and Korean auto manufacturers have increasingly relied on their U.S. manufacturing facilities to supply the U.S. market. The result was a substitution of local production over imports. A dramatic example of this is the case of Hyundai. After increasing by 17 percent in 2003 and 26 percent in 2004, the value of light vehicle imports from Korea fell by more than 15 percent in 2005 as a result of a new Hyundai manufacturing facility in the United States beginning production. U.S. consumers are increasing their purchases of "import brands" that are made in the United States.

### **Exports**

On the export side of the trade equation, light vehicle exports were up 20 percent over 2004. In 2004 the United States exported 1,770,881 units to the world compared to 2,085,811 in 2005. Top U.S. light vehicle exports reached over 200 countries in 2005, producing a value of \$36 billion, a 20 percent gain over 2004. The top five export markets continue to be: Canada, Mexico, Germany, Saudi Arabia and the UK.

Canada remains the top destination for U.S. light vehicle exports. Exports to Canada increased by 10 percent to over \$16.5 billion. Our other NAFTA partner, Mexico, climbed to second place with exports increasing 11 percent to over \$4.5 billion. Mexico has been steadily gaining in importance as an auto trading partner compared to pre-NAFTA when it was not even in the top 15 export destinations. Germany slipped to third with U.S. exports declining by 7 percent to \$3.7 billion.

With the exception of the United Kingdom, where export sales declined 3 percent, the other main U.S. export markets increased significantly. Exports to Japan increased by 3 percent to 22,874 units. Exports to Saudi Arabia increased by 61 percent to 127,385 units, and exports to China increased by 233 percent to 15,678 units. Although still small compared to other export markets, light vehicle exports to Korea increased significantly in 2005, growing by 124 percent to \$116 million. This represents unit sales increasing from 2,587 in 2004 to 4,741 in 2005.

### **Imports**

Passenger vehicles and light truck imports reached \$137 billion in 2005 increasing slightly by 1 percent over 2004. The United States still imports more vehicles by volume and value than any other country. This is largely explained by shipments from plants in Mexico and Canada. Our NAFTA partners accounted for 46 percent of U.S. light vehicle imports. This is up from 44.7 percent in 2004. Along with Germany, Japan, and Korea, these five countries still account for over 90 percent of all U.S. light vehicle imports.

Germany was the primary source of U.S. light vehicle imports in 1965, while Canada was a distant third behind the U.K. Canada rose to the top in 1970 because of the Big Three investment in production facilities in Canada. In 1976, Japan – aided by the first oil shock in 1974 quickly rose to the top source for U.S. imports. Canada has since regained its top U.S. supplier status aided by Japanese investment in new production facilities there.

The import statistics of our primary import suppliers were mixed in 2005 as new production facilities open around the world. Imports from Canada were up 1.6 percent to \$44.1 billion while imports from Mexico decreased by 2.7 percent to \$16.9 billion. Imports from Japan increased by 9 percent to 35 billion dollars while imports from Korea decreased by 15 percent. Imports from Germany were flat at \$20 billion.

## **China**

China continued to be the envy of the world with a motor vehicle sales growth rate of 15 percent and total sales of 5.92 million vehicles. China is now the second largest vehicle market in the world after the United States, knocking Japan down to 3<sup>rd</sup> place with 5.82 million vehicles sold in 2005. While sales grew, profit margins could not keep pace and declined. According to Chinese National Bureau of Statistics, the average 2005 profit margin was 4 percent, well below the 2004 profit margin average of 6.8 percent. This decline in the profit rate was due to several factors. Increased competition, high material prices and a price war contributed to decreased profit margins.

U.S. auto manufacturers continue to do very well in the Chinese market. Ford brand sales increased 46 percent to 82,225 vehicles. Together with its affiliated brands, Ford sales in China totaled 220,000 vehicles. Ford's luxury brands, Lincoln, Jaguar, Land Rover, and Volvo continue to be very popular. Ford attributes this sales increase to new products, an expanded dealer network and the launching of its financial arm in China. To date, Ford has invested more than \$1 billion in China.

The Chinese market continues to be General Motors shining star. In 2005, General Motors gained the top sales position, knocking off VW, which held the top spot for years. GM reported that its Chinese sales rose 35 percent to a record 665,390 vehicles - - capturing 11.2 percent of the market. While nearly all of GM cars sold in China are also made there, GM has successfully introduced the Cadillac brand into China, selling 2,000 U.S.-made vehicles in 2005.

In spite of increased local capacity in China, U.S. exports are currently expanding, due to the market liberalizing provisions required of China as the price of its admission to the WTO. Import duty rates that were as high as 220 percent have fallen to 28 percent, and are scheduled to drop to 25 percent on July 1, 2006. Quota restrictions were eliminated on January 1, 2005. Exports to China by all U.S. shippers of cars and light trucks reached \$340 million in 2005, up 253 percent for the year. Volume was over 15,678 units, representing a gain of 233 percent for the year.

The continuing fears of overcapacity, increased competition and price cutting are offset by continued favorable market conditions, especially China's growing middle class. For 2006, the China Association of Automobile Manufacturers is forecasting sales and production to increase by 12 percent.

The Geely Automotive Holding Company from China made a big splash at the 2006 Detroit Auto Show when it was the first Chinese company to display a car at the show. Geely intends to begin exporting to the United States in late 2008. Currently Geely exports to over 30 countries mainly in the Middle East and Latin America, but clearly has its sight set on the U.S. market. Geely has come a long way since it began as a refrigerator parts manufacturer. Geely made its first car in 1998, but by 2005, sold 120,000 vehicles in China, and has plans to increase capacity to 750,000 units by 2010 with half for export. Geely will face a number of hurdles entering the U.S. market -- safety, emissions, dealer network and name recognition to name a few.

## **Korea**

In February 2006 the United States and South Korea announced their intention to negotiate a free trade agreement. The office of the United States Trade Representative has billed this FTA as "the largest in 15 years," the largest since NAFTA. For the automotive sector, trade with South Korea is already a multi-billion dollar a year undertaking, though one that is decidedly weighted towards U.S. imports.

The South Korean automotive industry is world class, and exports from South Korea's automakers go to all of the key world markets, including the United States. For example, Hyundai (including Hyundai controlled Kia) is the 9th largest vehicle manufacturer in the world, with 2004 production and sales of 3.2 million vehicles. Hyundai is the largest vehicle manufacturer in Korea, with 2005 sales of 837,000 units (571,000 Hyundai and 266,000 Kia). The Hyundai group controlled 76 percent of the Korean Market in 2004. While Hyundai is based in Korea, the company is heavily reliant on export sales. In 2004 Hyundai/Kia exported 69 percent of its Korean production.

The United States and South Korea already have a history of negotiations on automotive trade, having reached agreement on two Memoranda of Understanding to improve access to the Korean market – one in 1995 and one in 1998. These MOUs were negotiated because U.S. vehicle manufacturers were prevented from selling into the Korean market by a variety of measures.

In 1994, before the first MOU was signed, import sales in the Korean auto market totaled 3,810 vehicles (0.3 percent of the market), with Ford, Chrysler and General Motors accounting for slightly over half that total. By 1997, total import share had only climbed to only 0.7 percent, with U.S. manufacturers accounting for approximately half (or 0.35 percent of the Korean market). Also during that time, the U.S. automotive trade deficit with Korea rose dramatically, up 30 percent to reach \$1.8 billion. As a result of unsatisfactory progress under the 1995 MOU, a second more comprehensive agreement was negotiated and put into place in 1998 (for more detailed information on the 1998

MOU see the report “World Motor Vehicle Import Requirements,” also on the Office of Aerospace and Automotive Industries web page: [www.ita.doc.gov/auto](http://www.ita.doc.gov/auto)). While import sales in Korea have improved slowly, they are still low representing only slightly over three percent of the total market in 2005. Meanwhile, the U.S. automotive trade deficit with Korea has continued to climb. Between 1996 and 2005 this deficit increased from \$1.7 billion to \$9.7 billion.

The Korean manufacturers have been enjoying a long string of success in the U.S. passenger vehicle market. Every year since 1993 they have either maintained or increased their share of the U.S. market, rising from 0.8 percent with sales of 109,000 vehicles in 1993 to 4.3 percent of the market with sales of 731,000 vehicles in 2005.

Korean automakers have a long history in the United States – one that, contrary to current trends, has not always been successful. The first Korean automaker to enter the United States was Hyundai in 1986. Kia followed much later in 1994 and Daewoo started sales in 1998 (only to leave the U.S. market in 2003 after declaring bankruptcy and to re-enter the U.S. market badged as Chevrolet and Suzuki products after GM purchased Daewoo assets and created a new company).

In 1986 Hyundai introduced the Excel, a small sedan, priced well below competitors’ brands. Sales of the Excel reached 264,000 units by 1988. To build on the brands growing popularity, in late 1988 Hyundai opened a plant in Canada, producing the Sonata (primarily for the Canadian market, with some exports to the United States). However, after only a few years of success, the Excel developed a reputation for poor quality, and sales plummeted. By 1992, Excel sales were down to only 42,000 and total Hyundai sales reached only 109,000 units. After only three years of production, the Hyundai Canada plant closed. It wasn’t until the year 2000 that Hyundai sales began to approach the peak year of 1988, with sales reaching past that peak in 2001.

After a long period of supplying the U.S. market entirely through exports, Hyundai has now invested over \$1 billion in its first U.S. manufacturing plant in Montgomery, Alabama. The plant began assembly of Hyundai’s Sonata sedan in April of 2005. These cars are now being sold from Hyundai’s dealer lots nationwide. Hyundai plans to begin production of its extremely popular Santa Fe SUV at the Montgomery plant in 2006. By 2007, the plant is expected to reach full capacity with production of 300,000 vehicles a year, employing 2,000 people. In March 2006, Kia announced its first U.S. production plant in West Point, Georgia. The plan calls for an investment of \$1.2 billion. The plant will begin production in 2009, eventually reaching full capacity of 300,000 units and employing 2,500 workers.

## **Thailand**

Thailand is the major automotive industry hub in Southeast Asia, and has been dubbed the “Detroit of Asia.” Thailand is a member of the Association of South East Asian Nations (ASEAN), a regional trading block with combined annual vehicle sales of two million units in 2004. Thailand is considered to be the most mature automotive market in

ASEAN. It has been chosen by many manufacturers as their center of operations in the region, and exports vehicles throughout the ASEAN region and beyond.

Thailand has quickly recovered from the 1997/1998 Asian Financial Crisis and by 2004, was number one in ASEAN again with total sales of 574,933 units. Total production in 2004 was 856,128 units. The Thai Government forecasts that in 2006, production will be 1.1 million units and could reach 1.8 million vehicles by 2010 – 1 million units dedicated for export.

In a drive to make Thailand the world's leading pickup truck producer, manufacturers are working on increased investment, new product plans, and relocation of production lines. Recent reports assert that an estimated 750,000 pickup trucks will be built in Thailand in 2006. In contrast, the United States produced a total of 2.8 million pickup trucks in 2005.

By 2008, General Motors and Ford will both have a total investment of \$1 billion in Thailand. Experts assert that by 2010, Thailand will be the third-largest automotive producing nation in Asia, after Japan and China, and the 10th largest in the world.

## **Japan**

Further opening of the Japanese auto and auto parts markets remains an important objective of the United States, but access continues to be impeded by a variety of restrictive regulations, and a lack of transparency in rule making. While there has been a trend toward closer integration in the global automotive industry over the past several years, their impact on market access and competition in Japan remains unclear.

Overall, sales of North American-made vehicles and parts in Japan were flat in 2005. Sales in Japan of motor vehicles produced in the United States increased slightly by 3.1 percent in 2005, following a decline of 8 percent in CY2004. U.S. automakers currently sell less than 12 percent as many U.S.-made vehicles in Japan as they did in 1995. The U.S. automotive trade imbalance with Japan, \$50.2 billion in 2005 (\$35.2 billion deficit in autos and \$15.0 billion deficit in auto parts), is the equivalent of more than 60 percent of the overall U.S. trade deficit with Japan and made up 6.5 percent of the 2005 worldwide U.S. trade deficit. Access to the Japanese market may be further threatened by the recent divestitures by GM and DaimlerChrysler in their Japanese investments. In November 2005, DaimlerChrysler sold its entire 12.42 percent stake in Mitsubishi Motors. In October 2005, GM sold its entire 20 percent stake in Subaru. In March 2006, GM sold 17.4 percent of Suzuki. GM still retains 3 percent of Suzuki. In April 2006, GM announced it was selling the 7.9 percent stake it held in Isuzu.

The United States continues to work with Japan to address issues affecting the automotive sector, such as expanding opportunities for foreign investment, increasing transparency in rule making, and promoting corporate restructuring in the Japanese economy under the Economic Partnership for Growth.

## **NAFTA and Beyond – Integration Continues**

In 2005, the governments of the United States, Canada and Mexico launched the Security and Prosperity Partnership (SPP), to increase the integration of the North American market and improve the competitive position of the region's industry. The North American automotive industry is already highly integrated – a process that began with the 1965 Auto Pact between the United States and Canada and accelerated tremendously with the passage of the North American Free Trade Agreement (NAFTA) in 1994, which included the United States, Canada, and Mexico. The SPP will include a sub-group devoted to the automotive industry. At the time of this writing the group's agenda has not been set.

Implementation of the NAFTA has had a tremendous impact on automotive trade in North America. Shipments of new passenger vehicles and light trucks between the United States and its two partners have grown tremendously. In 2005, cross-border trade hit a new record high, reaching \$81.2 billion. In the year before NAFTA, two-way shipments were \$36.5 billion – less than half the 2005 total. Most of the growth during this period was the result of increased imports by the United States, which rose from \$28.4 billion in 1993 to 2000's peak of \$61.7 billion. Most of the increase in 2005 can be attributed to increased exports to Canada, up almost \$1.5 billion (a 10 percent increase). Exports to Mexico were also up, increasing \$300 million (up 8 percent).

In 2005 imports from Canada and Mexico reached \$60.4 billion – more than double the size of 1993's sum. U.S. exports also have more than doubled, growing from \$8 billion in 1993 to \$21 billion last year. The United States continues to experience deficits with both countries. However, their combined share of the U.S. global deficit in these products has declined steadily, dropping from a high of 54 percent in 1996 to 39.8 percent in 2005 (up slightly from 2004). (Chart 13)

Most trade in automotive products between Canada and the United States was liberalized by two bilateral agreements enacted well before the NAFTA agreement was implemented. Therefore, little of the growth in trade between the two countries can be attributed directly to the NAFTA agreement. Bilateral trade with Canada in these products, \$32.8 billion in 1993, reached \$60.3 billion in 2005. U.S. exports have increased by 107 percent to \$16.5 billion, while imports from Canada grew 77 percent above 1993's total to \$43.9 billion.

Before NAFTA was enacted, exports to Mexico from the USA were artificially constrained by a host of measures enacted by the Mexican government to force firms to produce in Mexico, if they wished to export there. In 1993, our shipments of new passenger vehicles and light trucks totaled less than \$95 million. They jumped 500 percent in 1994, the first year of the agreement, reaching \$580 million. By the end of 2005, U.S. exports to Mexico totaled \$4.3 billion, 45 times greater than shipments in 1993. Mexico displaced Japan as our second most important international market in 1997 (though it fell to number three [behind Germany] in 2003 and remained in that position through 2005). Those increases came about because U.S. firms were able to rationalize

and relocate some of their Mexican production to U.S. plants, and because they could export more models to Mexico from the United States without being subject to artificial import and local production constraints.

Imports from Mexico have grown rapidly since the agreement was signed, climbing from \$4.5 billion in 1993 to a total of \$16.5 billion in 2005 (down from \$17.4 billion in 2004). Because the U.S. border was already largely open to Mexican imports before the trade pact was signed, it would be a mistake to attribute this surge entirely to the NAFTA agreement. The exception is the increase in U.S. imports of those trucks that have an MFN duty rate of 25 percent (those primarily designed for cargo, such as two-door pickup trucks and certain medium/heavy duty trucks). Imports of these trucks has increased 1000 percent since 1993. This increase represents just under half of the total increase in motor vehicle imports from Mexico during that time.

However, the growth in U.S. exports can be directly credited to the agreement, since there were significant changes in cross border market access for goods heading to Mexico, with the removal of Mexican restrictions that constrained U.S. shippers. For example, a Mexican requirement that producers assemble vehicles in Mexico and export a certain percentage of them in order to import vehicles into Mexico, was immediately phased out for commercial vehicles and reduced for passenger vehicles. On January 1, 2004, the remaining restrictions were entirely eliminated. Strict quotas, high tariffs, and minuscule import market share allocations that applied to motor vehicle imports from the United States have been eliminated. Mexican content requirements were substantially curtailed and were eliminated entirely by January 1, 2004. Import duty rates for U.S. products, which reached as high as 20%, were voluntarily eliminated by Mexico on January 1, 2003, one year ahead of schedule.

Before the accord was signed, many observers expressed reservations, believing that the lower wage rates in Mexico would result in the immediate and significant relocation of U.S. light vehicle manufacturing capacity to sites south of the border. Instead, data produced by Harbour and Associates indicates that light vehicle assembly capacity has increased in all three countries since 1993, rising from a total of 16.7 million units to 17.8 million vehicles in 2004. (Chart 14) Capacity has grown the fastest in Mexico, and was 14.4 percent higher in 2003 than in 1993. However, the increase has been from a relatively smaller base. U.S. capacity in 2004 was 6.5 percent greater than in 1993, but the absolute increase of 813,000 additional units, is more than triple Mexico's 227,000-unit increase.

Largely as a result of Detroit 3 plant closures and capacity adjustments, overall capacity in North America was down 1.3 percent in 2004 compared to 2003. This followed a 1.6 percent decline in 2003. The United States and Mexico were stable with U.S. capacity up 0.1 percent and Mexico up one percent. Canadian capacity was down nine percent. Plant capacity is not static, however, and its measure depends upon a combination of factors that can change from year to year, and even from day to day. Variables include the level of investment in physical plant, the efficiency of the processes employed, complexity of the vehicles being assembled, the number of employees on the assembly

line, and the number of hours of operation. Measured capacity in all three countries actually declined in the first year of the NAFTA, dropping the most in Mexico – 1%. (Chart 15) By the end of the second year, capacity had increased the most in Mexico – 15% – despite the economic crisis that the country was then experiencing.

Plant capacity utilization – dividing the number of units actually produced in a year by estimated annual production capability – is another useful tool for measuring changes in the industry. Harbour's data shows that in 1993, Mexico produced one million vehicles in plants with a capacity to assemble 1.4 million, yielding a 72 percent utilization rate. During Mexico's 1995 'peso crash,' light vehicle production in the country's plants dropped 16 percent to 925,000 units, while capacity had risen that year by nearly 15 percent to 1.6 million units. The net result was a 27 percent decline in utilization for the year to a rate of 58 percent. (Chart 16) By the end of 2000, Mexico's utilization rate had hit 100 percent, the highest of any of the three countries. It fell the next four years, dropping to 82 percent in 2004. The U.S. rate, 84 percent in 1993, was 85 percent in 2004. Although capacity was down nine percent in Canada in 2004, utilization rates were up over ten points, to reach 96 percent. Actual production in Canada was up three percent. Between 1993 and 2003, the overall utilization rate averaged 90 percent in U.S. plants, 88 percent in Canadian plants, and 82 percent in Mexican plants.

According to Harbour Reports' data, the majority of light vehicle production in each of the three countries is accomplished in the plants of the American Detroit 3. (Chart 17) In 1993 they accounted for 81 percent of all NAFTA production. Since then, their share has fallen almost every year, reaching only 71.9 percent in 2004 – a decline of almost a point a year in share.

Detroit 3 production in Canada has been relatively stable over the last ten years, achieving a slight bump up in the late 1990's, but returning to an almost identical level in 2004 as in 1993 (1993 production 1.86 million, 2004 production 1.85 million units). As alluded to above, in 2004 Detroit 3 capacity in Canada declined 11.5 percent. However, a jump in utilization from 85 percent to 96 percent left actual production levels virtually unchanged (up 0.1 percent). Detroit 3 share of Canada's production has fallen from 84.5 percent in 1993 to 71.3 percent in 2004.

In Mexico, Detroit 3 production increased between 1993 and 2000, going from 643,000 units to 1.1 million units. However, from 2000 to 2004, their production in Mexico declined, falling back below a million units to 902,000 vehicles. Their share of Mexican production peaked in 1996 at 72.8 percent, but had fallen to 58.5 percent by 2004.

Detroit 3 production in the United States has shown a much greater degree of fluctuation, rising from 8.8 million in 1993 (an 82.3 percent share of local production) to a peak of 10 million units in 1999 (79.7 percent), falling to a low of 8.5 million units in 2001 (76.4 percent). 2002 saw a recovery to 9.2 million units (77.3 percent share). In 2003 Detroit 3 production was back down to 8.5 million units (74.2 percent share). In 2004, Detroit 3 production was down again to 8.3 million units, for a 73.9 percent share of production. The trend of declining share of production for the Detroit 3 will accelerate in the coming



years as new foreign owned companies' plants come on line and GM and Ford implement their plant closing strategies.

## **Summary**

U.S. light vehicle sales increased for the second straight year, reaching 16.9 million units in 2005. 2005 was the third highest sales level on record. Many analysts' forecasts for 2006 indicate a similar market.

Although the Detroit 3's incentives during the summer of 2005 helped their sales, their overall market share for the year continued in its long-term decline. In 2005, they accounted for 56.8 percent of the overall market. Most analysts predict this decline will continue.

The U.S. automotive trade deficit shrank by 4 percent to \$101 billion in 2005. Even though exports were up for the fourth year in a row, they continue to be swamped by rising imports. There is no reason to expect a reversal of this trend in the future.

Prepared by: Liz Couch/Office of Aerospace and Automotive Industries

**– INDUSTRY TABLES –**

### Table 1

Total U.S. Motor Vehicle Registrations (Millions)			
	Cars	Trucks	All Vehicles
2000	133.6	87.1	221.5
2001	137.6	92.0	230.4
2002	135.9	92.9	229.6
2003	135.7	94.9	231.4
2004	136.4	100.0	236.4
Source: U.S. Department of Transportation			

### Table 2

U.S. Cars and Trucks Registrations per:						
	1999	2000	2001	2002	2003	2004
1,000 Residents	791	784	819	796	793	804
1,000 Driving Age (16yrs & older)	1,024	1,017	1,071	1,027	1,021	1,034
1,000 Licensed Drivers	1,152	1,158	1,205	1,182	1,176	1,188
Derived from U.S. Department of Transportation/U.S. Census Bureau data by U.S. Department of Commerce/Automotive Industries Team						

### Table 3

U.S. Motor Vehicle Sales (Millions)							
	1999	2000	2001	2002	2003	2004	2005
Cars	8.7	8.8	8.4	8.2	7.6	7.5	7.7
Light Trucks	8.2	8.5	8.7	8.7	9.0	9.3	9.2
<b>Total LV</b>	<b>16.9</b>	<b>17.3</b>	<b>17.1</b>	<b>16.9</b>	<b>16.6</b>	<b>16.8</b>	<b>16.9</b>
Med/Heavy Trucks	0.5	0.5	0.4	0.3	0.3	0.4	0.5
<b>Total All</b>	<b>17.4</b>	<b>17.8</b>	<b>17.5</b>	<b>17.2</b>	<b>16.9</b>	<b>17.3</b>	<b>17.4</b>
Source: Ward's Automotive Reports							

### Table 4

Consumers' Expenditures (PCE) (Billions of Current Dollars)							
	1999	2000	2001	2002	2003	2004	2005
Cars, New	98.4	105.5	105.9	103.2	97.3	97.1	102.1
Light Trucks, New	97.8	102.6	121.8	137.8	168.7	172.8	164.6
<b>Total, New</b>	<b>196.2</b>	<b>208.1</b>	<b>227.7</b>	<b>241.0</b>	<b>266.0</b>	<b>269.0</b>	<b>266.7</b>
Net, Used Autos	57.7	59.4	60.6	58.6	48.3	52.9	54.7
<b>Total</b>	<b>253.9</b>	<b>267.5</b>	<b>288.3</b>	<b>299.6</b>	<b>314.3</b>	<b>322.8</b>	<b>321.4</b>
Source: U.S. Bureau of Economic Analysis							

**Table 5**

U.S. Motor Vehicle Production (Millions)							
	1999	2000	2001	2002	2003	2004	2005
Cars	5.6	5.5	4.8	5.0	4.5	4.2	4.3
Light Trucks	7.0	6.8	6.3	7.0	7.3	7.3	7.2
Total LV	<b>12.6</b>	<b>12.4</b>	<b>11.2</b>	<b>12.0</b>	<b>11.8</b>	<b>11.6</b>	<b>11.5</b>
Med/Heavy Trucks	0.432	0.391	0.256	0.258	0.251	0.358	0.424
Total All	<b>13.0</b>	<b>12.8</b>	<b>11.4</b>	<b>12.3</b>	<b>12.1</b>	<b>12.0</b>	<b>11.9</b>
Source: Ward's Automotive Reports							

**Table 6**

Value of Manufacturers' Product Shipments (Billions of Dollars)					
	2000	2001	2002	2003	2004
Cars	95.6	84.6	88.1	86.1	86.8
Light Trucks	121.6	116.5	137.1	162.2	154.5
<b>Total LV</b>	<b>217.2</b>	<b>201.1</b>	<b>222.4</b>	<b>248.3</b>	<b>241.3</b>
Med/Heavy Trucks	20.1	13.0	15.6	15.0	20.4
<b>Total All</b>	<b>237.3</b>	<b>214.1</b>	<b>238</b>	<b>263.3</b>	<b>261.7</b>
Source: U.S. Census Bureau 2004 Annual Survey of Manufactures					

**Table 7**

Capital Expenditures for Plant and Equipment (Billions of Dollars)					
	2000	2001	2002	2003	2004
Car Plants	2.0	2.3	2.1	2.1	2.4
Light Truck Plants	2.1	2.8	2.6	2.9	2.1
<b>Total LV Plants</b>	<b>4.5</b>	<b>4.0</b>	<b>4.7</b>	<b>5.0</b>	<b>4.5</b>
Med/Heavy Truck Plants	0.3	0.5	0.2	0.2	0.2
<b>Total All Plants</b>	<b>4.8</b>	<b>4.5</b>	<b>4.9</b>	<b>5.2</b>	<b>4.7</b>
Source: U.S. Census Bureau 2004 Annual Survey of Manufacturers					

**Table 8**

U.S. Automotive Industry Average Annual Employment (1,000s)			
(NAICS Based)	2003	2004	2005
Automobiles (336111)	156.6	146.3	141.5
Light Trucks and utility vehicles (336112)	76.9	74.8	71.0
<b>Total Light Vehicles</b>	<b>233.5</b>	<b>221.1</b>	<b>212.5</b>
Heavy Duty Trucks (33612)	31.1	34.8	37.2
Total vehicles	264.6	255.9	249.7
Motor Vehicle Parts (3363) and Motor Vehicle Bodies (336211)	769.7	756.6	743.7
<b>TOTAL</b>	<b>1034.3</b>	<b>1012.5</b>	<b>993.4</b>
Source: U.S. Department of Labor/Bureau of Labor Statistics			

Table 9

Total Payroll & Fringe Benefits (Billions of Dollars)					
	2000	2001	2002	2003	2004
Car Plants	8.0	7.6	7.2	7.3	7.5
Light Truck Plants	9.4	8.7	10.4	11.0	11.5
<b>Total LV Plants</b>	<b>17.4</b>	<b>16.3</b>	<b>17.6</b>	<b>18.3</b>	<b>19.0</b>
Heavy Truck Plants	2.2	1.7	1.8	1.6	1.9
<b>Total All Plants</b>	<b>19.6</b>	<b>18.0</b>	<b>19.4</b>	<b>19.9</b>	<b>20.9</b>
Source: U.S. Census Bureau 2004 and Earlier Annual Survey of Manufactures					

**Table 10**

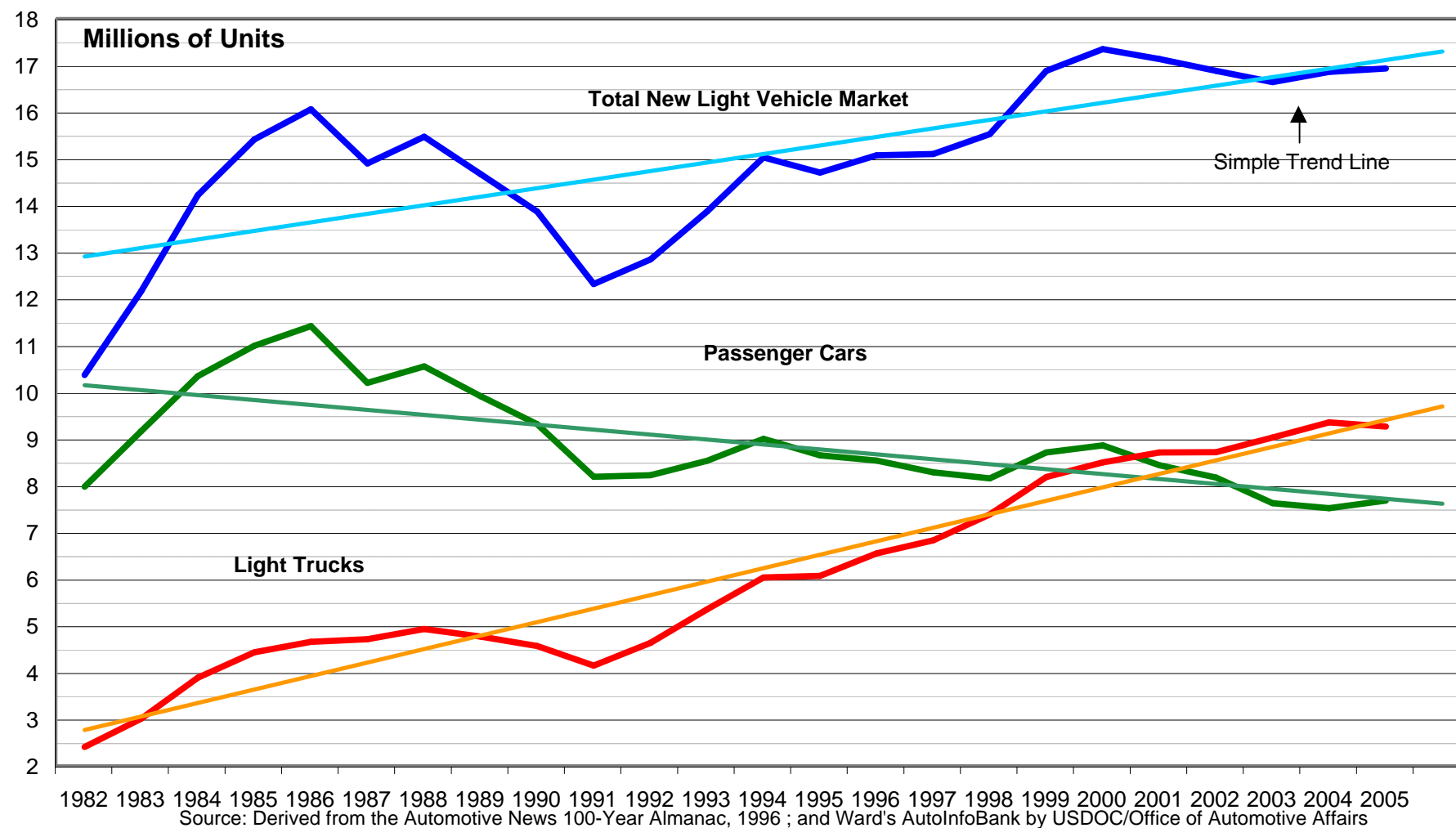
U.S. Exports of Passenger Vehicles & Light Trucks – Top 5 Markets Billions of Dollars, FAS						
	2000	2001	2002	2003	2004	2005
World	21.646	21.748	25.011	27.375	30.105	36.240
Canada	12.648	11.492	13.781	15.112	14.971	16.544
Mexico	3.462	3.758	3.805	3.190	3.996	4.446
Germany	1.177	1.171	2.788	3.940	3.998	3.702
S. Arabia	0.646	0.854	0.901	0.661	1.044	2.162
UK	0.333	0.531	0.641	0.878	0.872	0.820
Source: U.S. Census Bureau, using OAAI HTS Selections						

Table 11

U.S. Imports of Passenger Vehicles & Light Trucks – Top 5 Sources Billions of Dollars, Customs Value						
	2000	2001	2002	2003	2004	2005
<b>World</b>	122.035	121.005	128.448	128.765	136.113	138.572
Canada	42.246	38.491	39.136	38.478	43.440	44.134
Japan	32.092	31.117	35.045	32.197	32.229	35.142
Mexico	20.211	20.727	19.773	18.261	17.407	16.945
Germany	14.649	15.004	17.796	19.711	20.345	20.308
Korea	4.839	6.344	6.802	7.937	10.040	8.769
Source: U.S. Census Bureau, using OAAI HTS Selections						

**In 2005, U.S. sales of light trucks were 109% above 1985, but passenger car sales were 30% lower. Overall, the market was almost 10% larger than it was 20 years ago.**

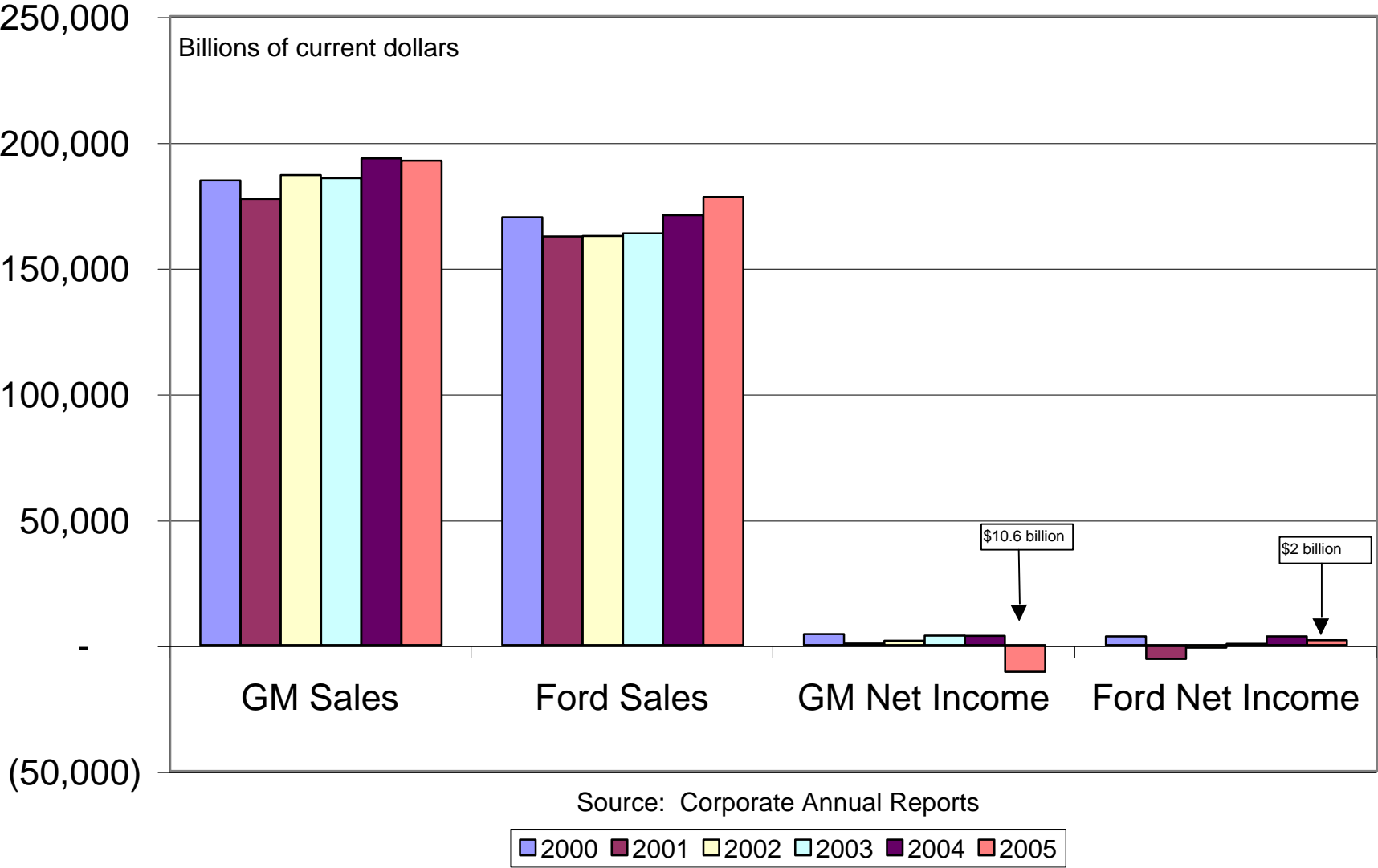
Chart 1



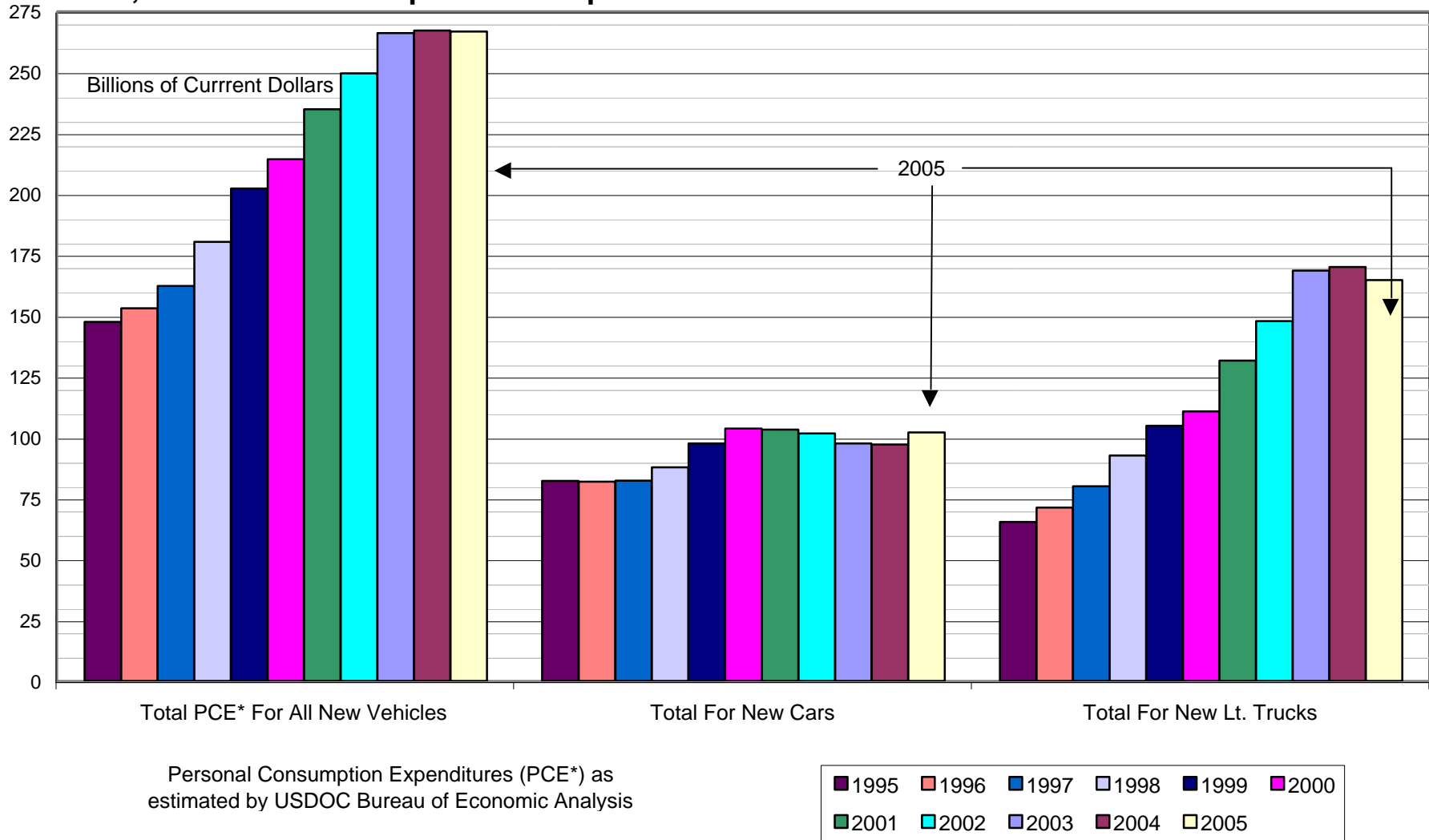


Both GM and Ford had financial struggles in North America in 2005.

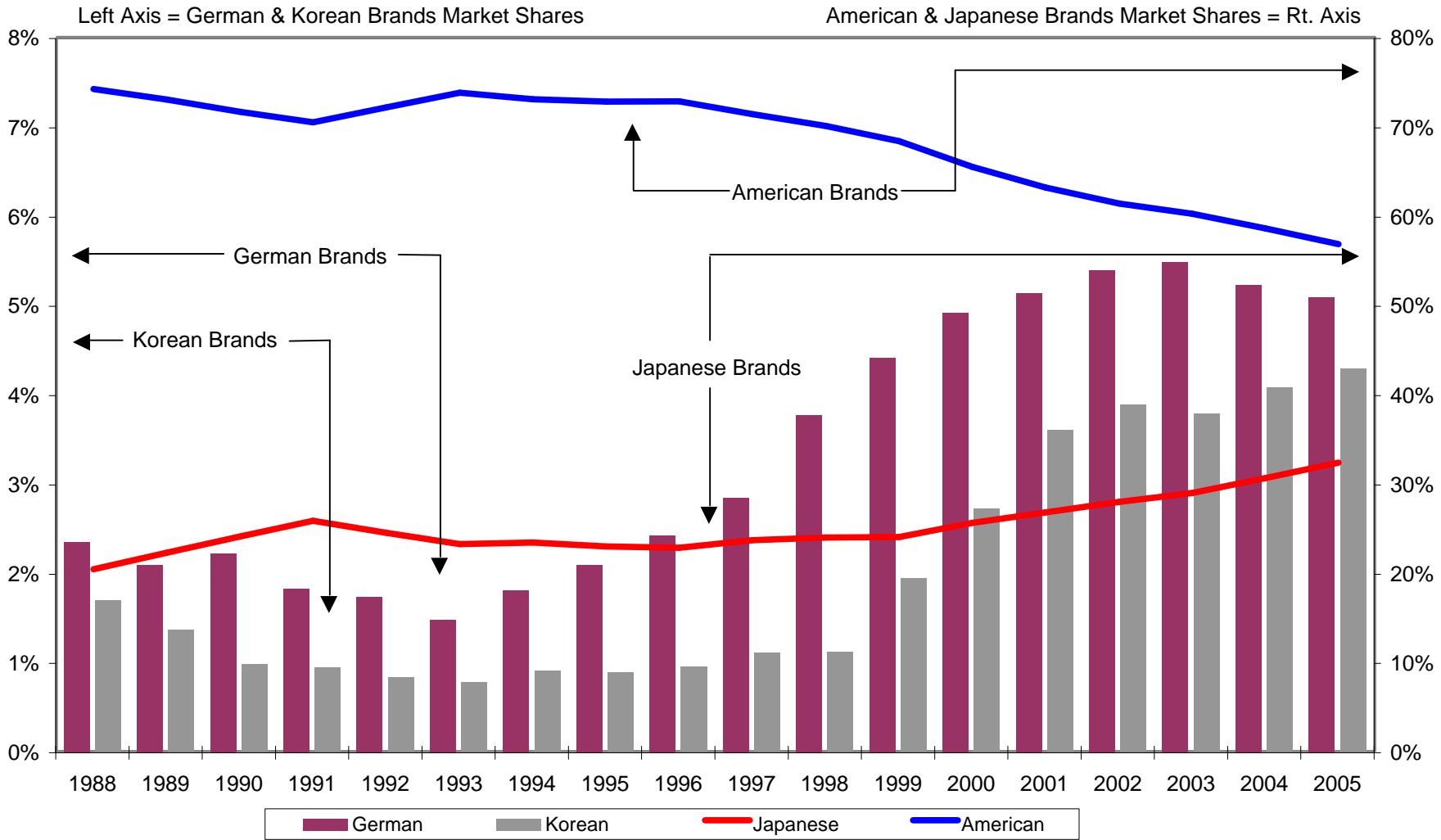
Chart 2



**Spending on new trucks in 2005 dropped for the first time since 1991, decreasing 2.3 percent from 2004, while expenditures on cars grew to \$102.1 billion, an increase of 4.7 percent compared to 2004.**



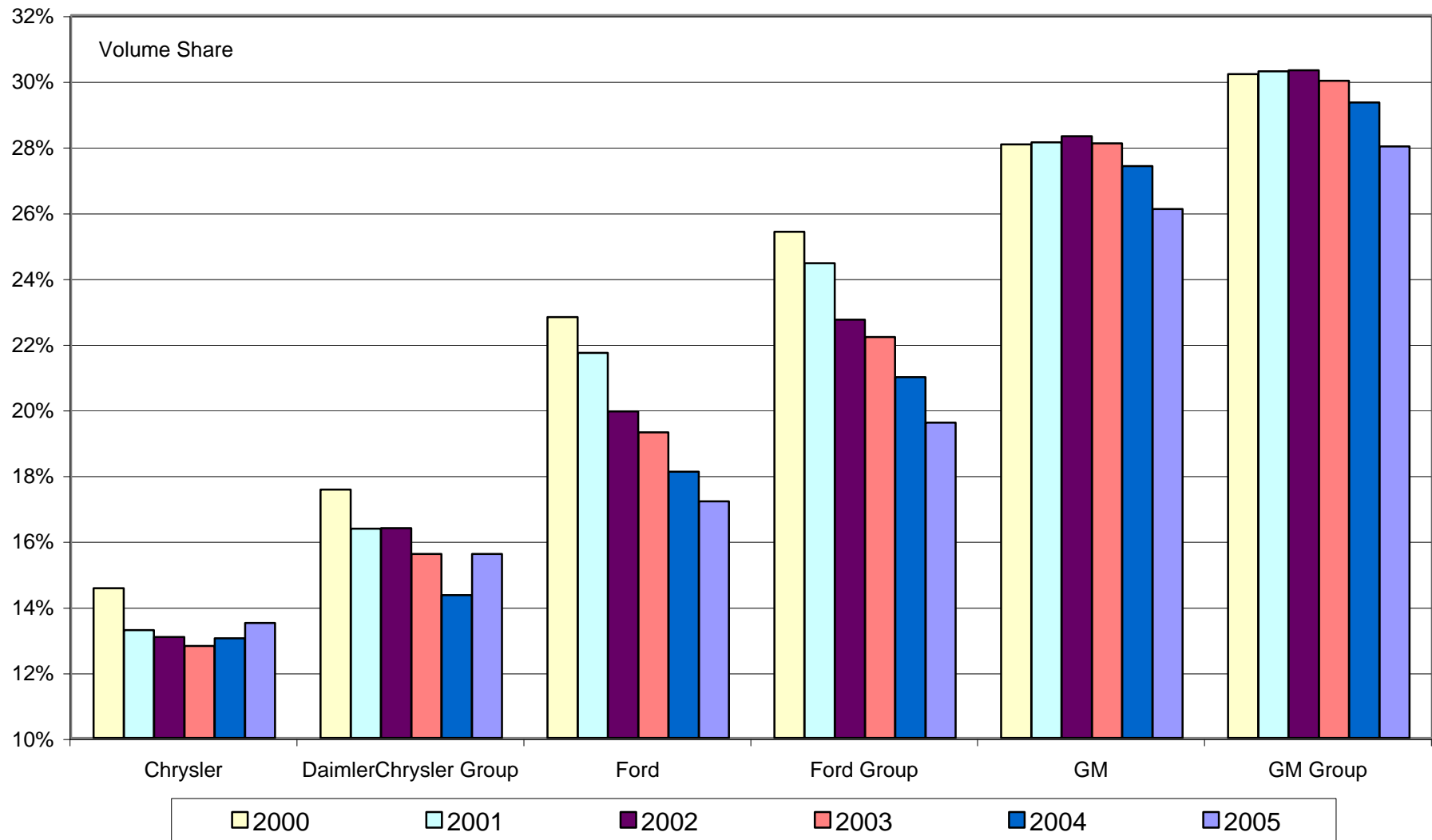
**The American brands' share of the domestic market continues to slip, while Japanese, Korean and German brands continue to gain market share.**



Source: Ward's AutoInfoBank, Adjusted by USDOC OAAI

Chart 5

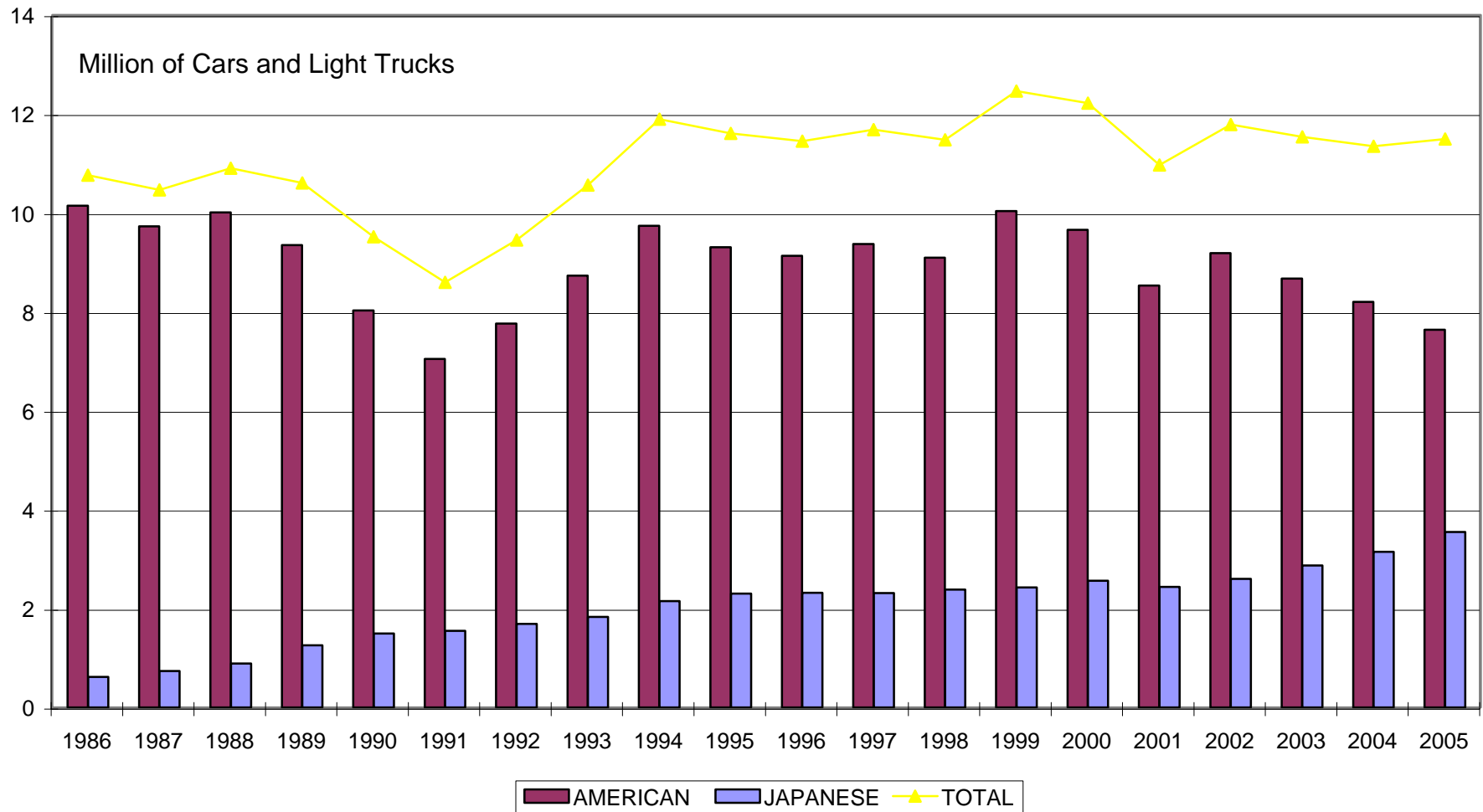
# **Corporate alliances have helped to prop up effective U.S. market shares.**



Source: Derived from Ward's AutoInfoBank by USDOC/OAAI

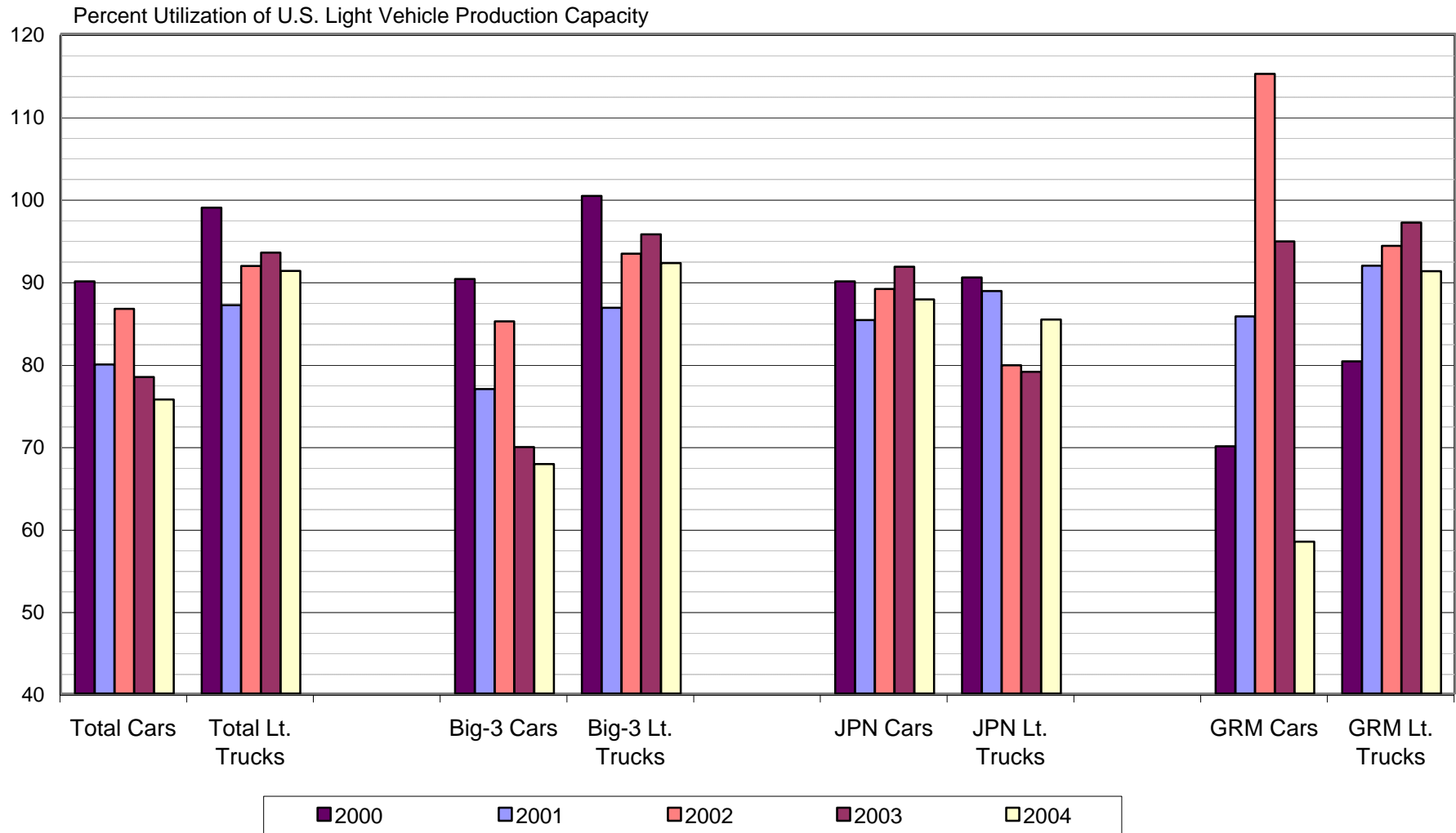
**While Big 3 production has on average trended downward,  
Japanese production has increased 54 percent since 1995.**

Chart 6



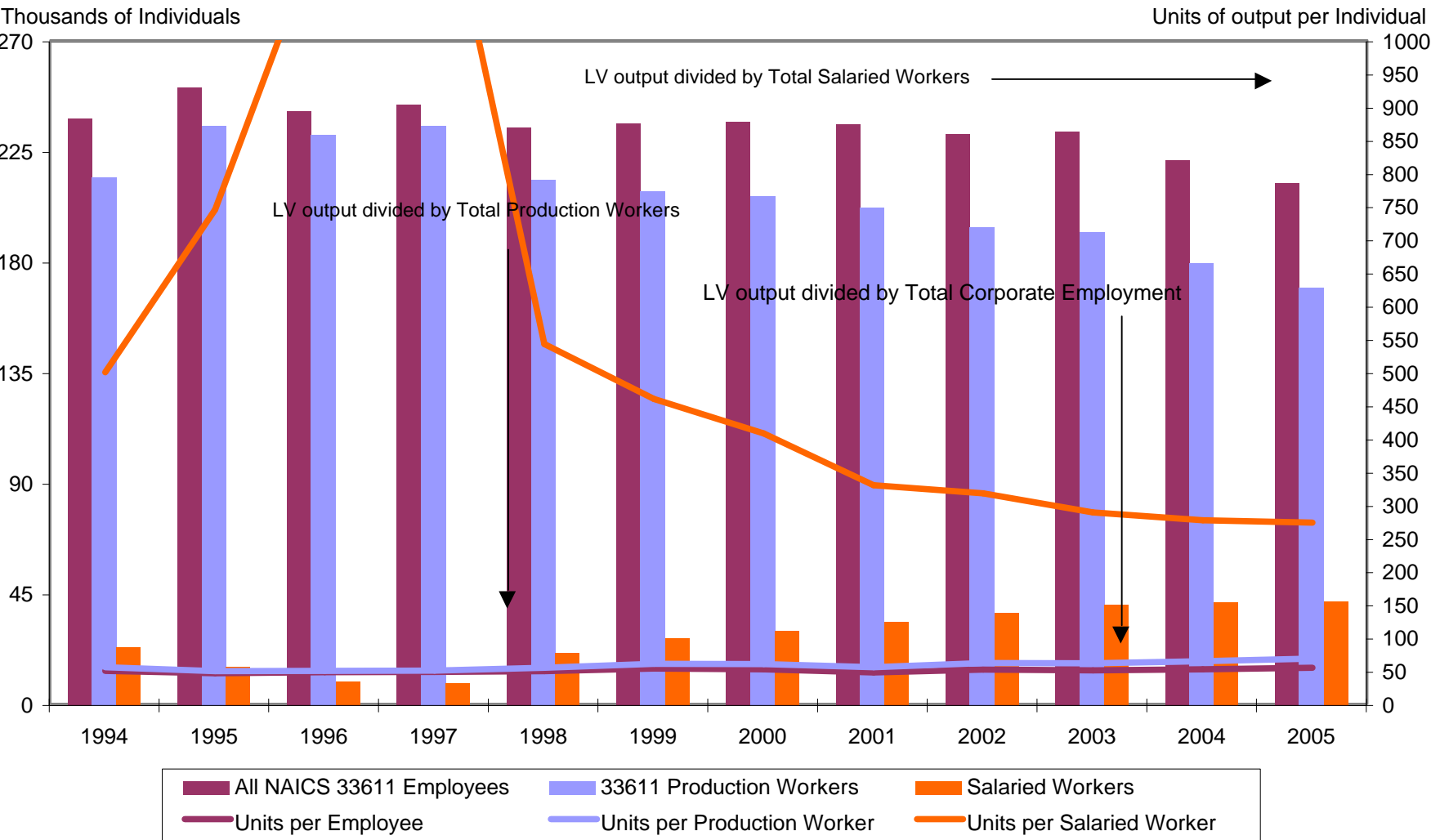
**Capacity utilization at light truck plants continues to far outpace utilization for passenger car production.**

Chart 7



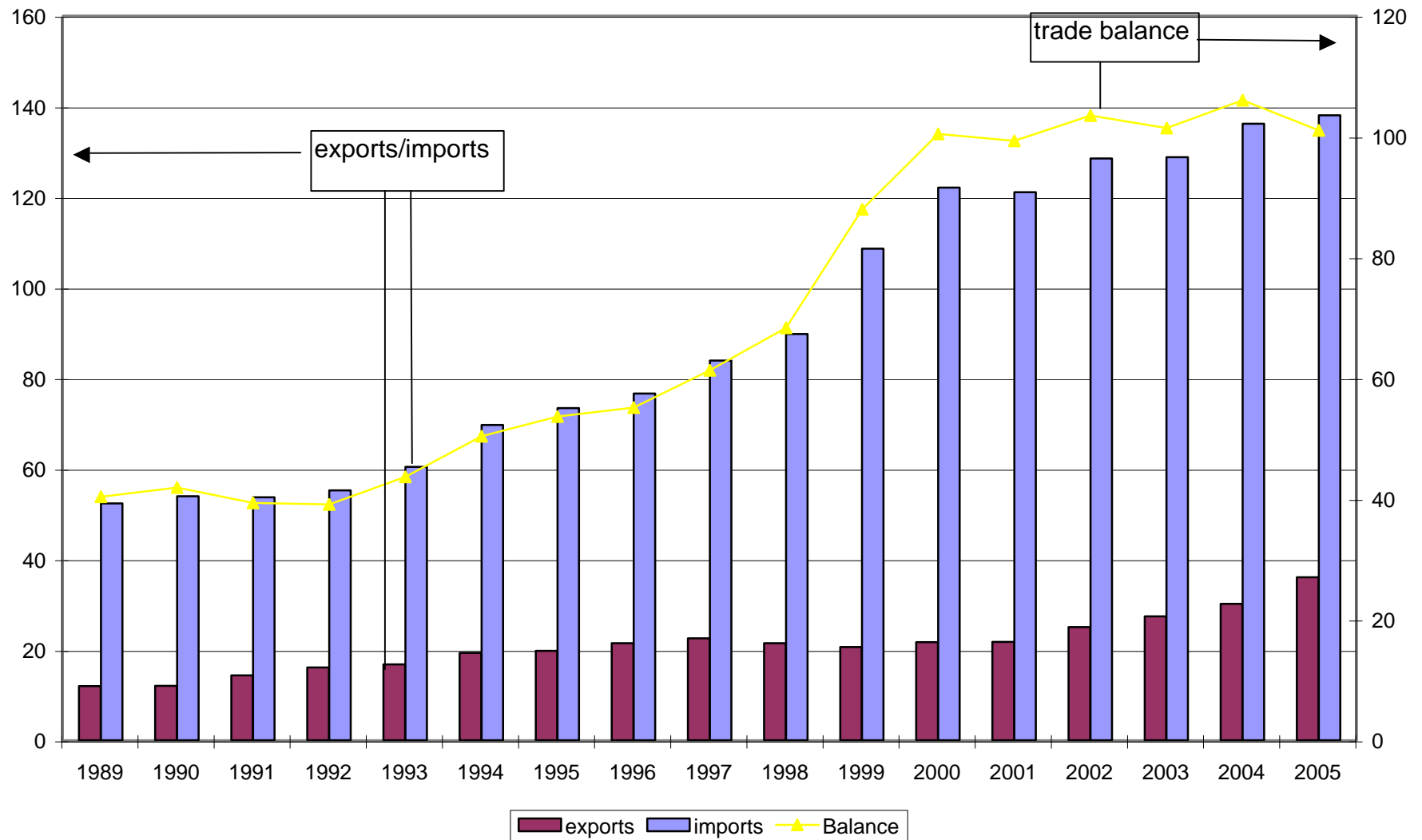
Source: Derived from The Harbour Report Annuals, 2000-2005 by USDOC Office of Aerospace & Automotive Industries

**Growth in salaried worker employment since 1997 has depressed increases in overall corporate-level productivity.**



Source: Derived from USDOL Bureau of Labor Statistics and Ward's AutoInfoBank by USDOC Office of Automotive Affairs

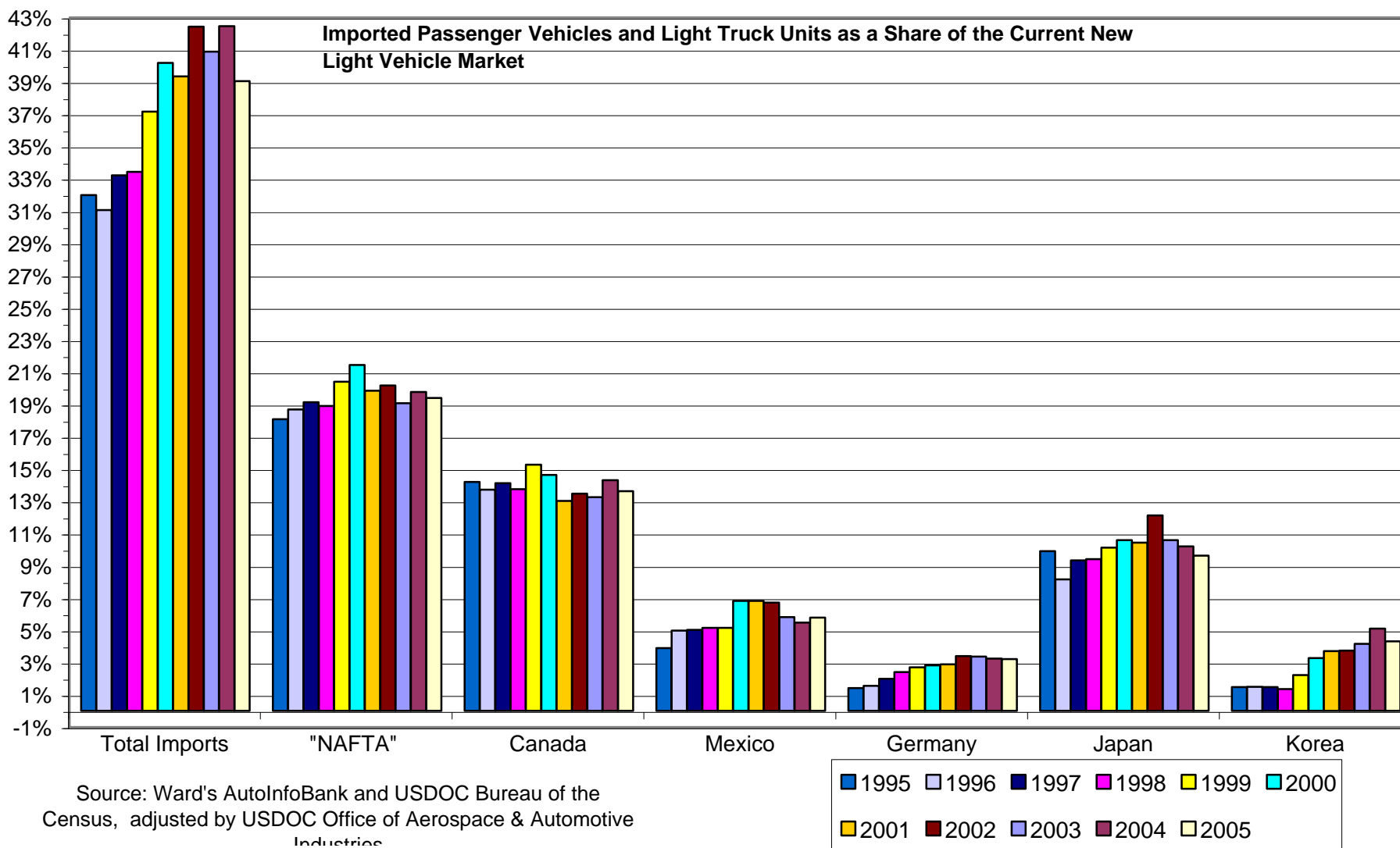
**In 2005, U.S. exports outpaced import growth, resulting in a 4% decrease in the motor vehicle trade deficit.**



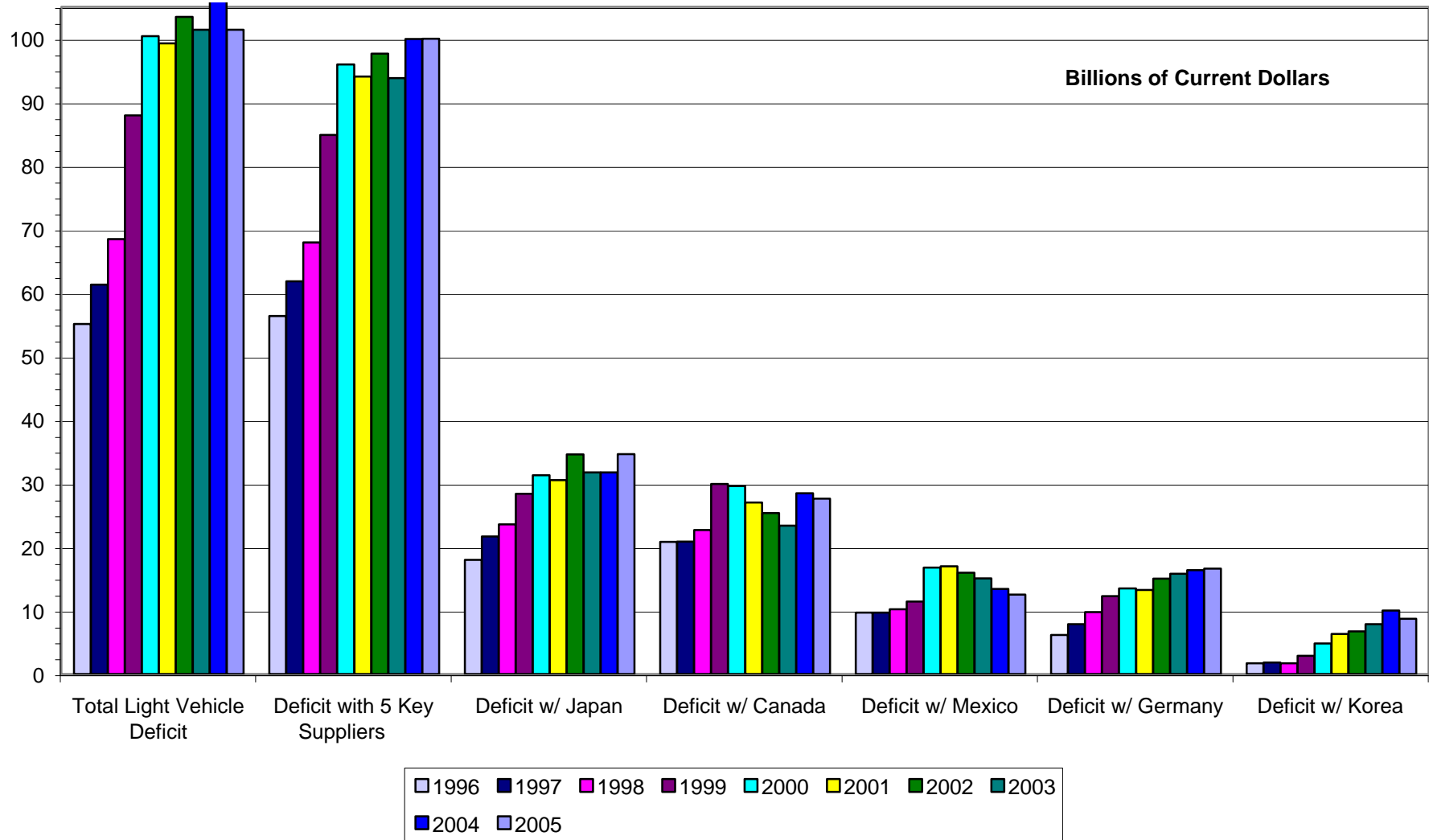


In 2005, true Imports (i.e., including those from Canada and Mexico) represented 39.1% of the U.S. light vehicle market, the lowest level since 1999.

Chart 10



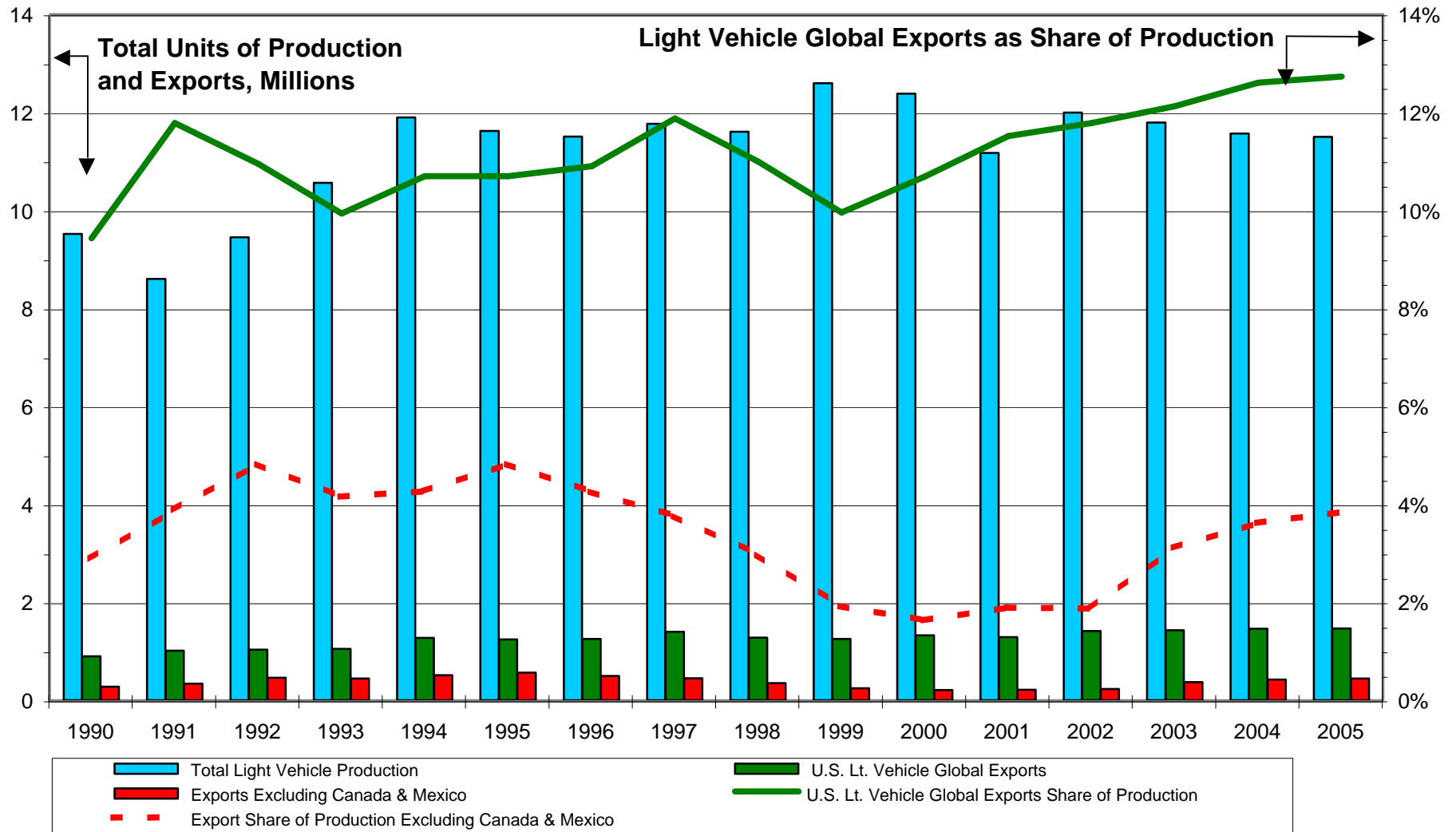
**In 2005, the overall U.S. light vehicle trade deficit decreased 4.4%, but the deficit with Japan increased 9%.**



Source: US Census Bureau using USDOC OAAI Product Selections

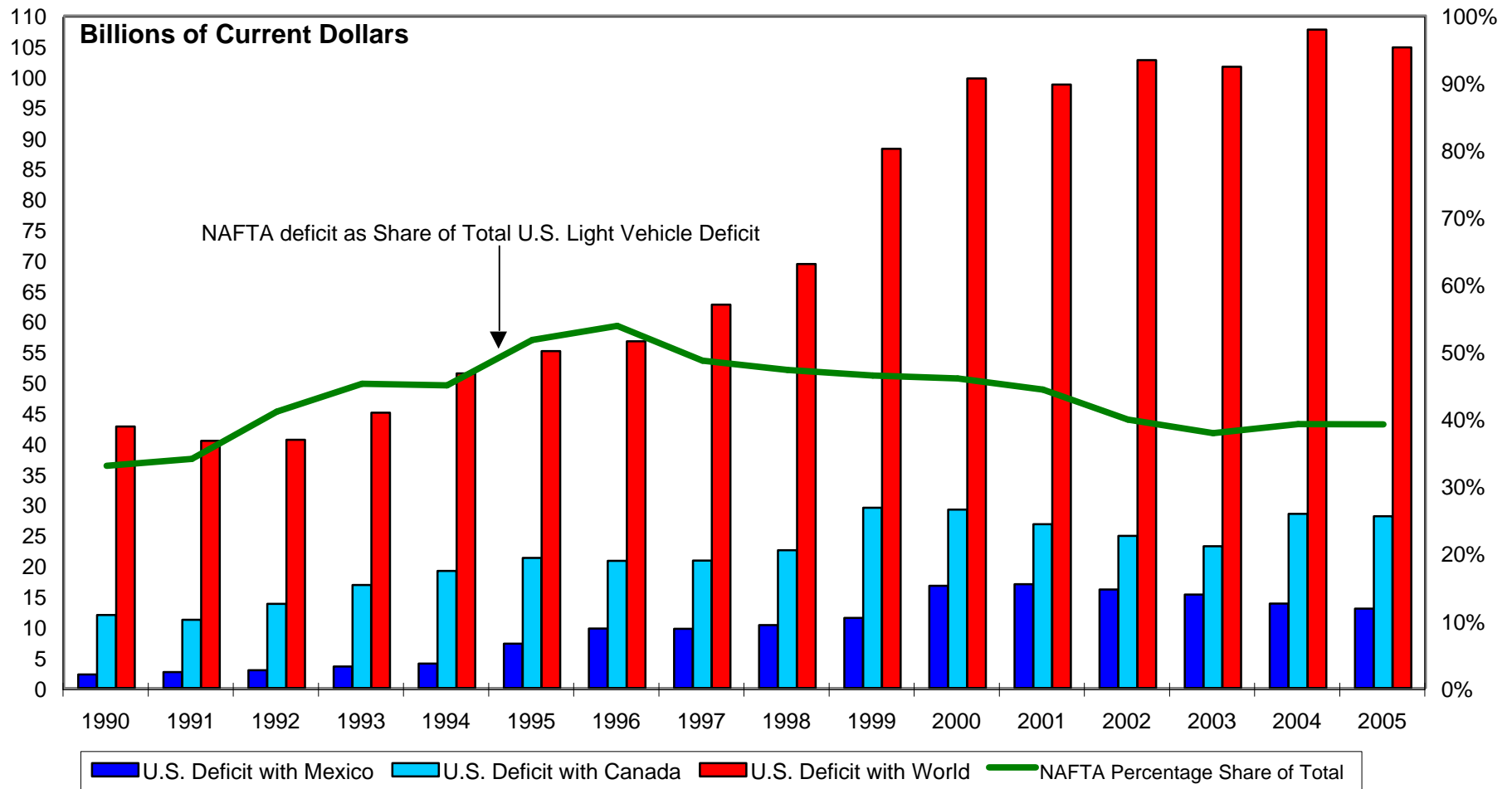
**Total U.S. light vehicle exports again are approaching a 15% share of domestic production. When shipments to Canada and Mexico are excluded, however, their share is 9% lower.**

Chart 12



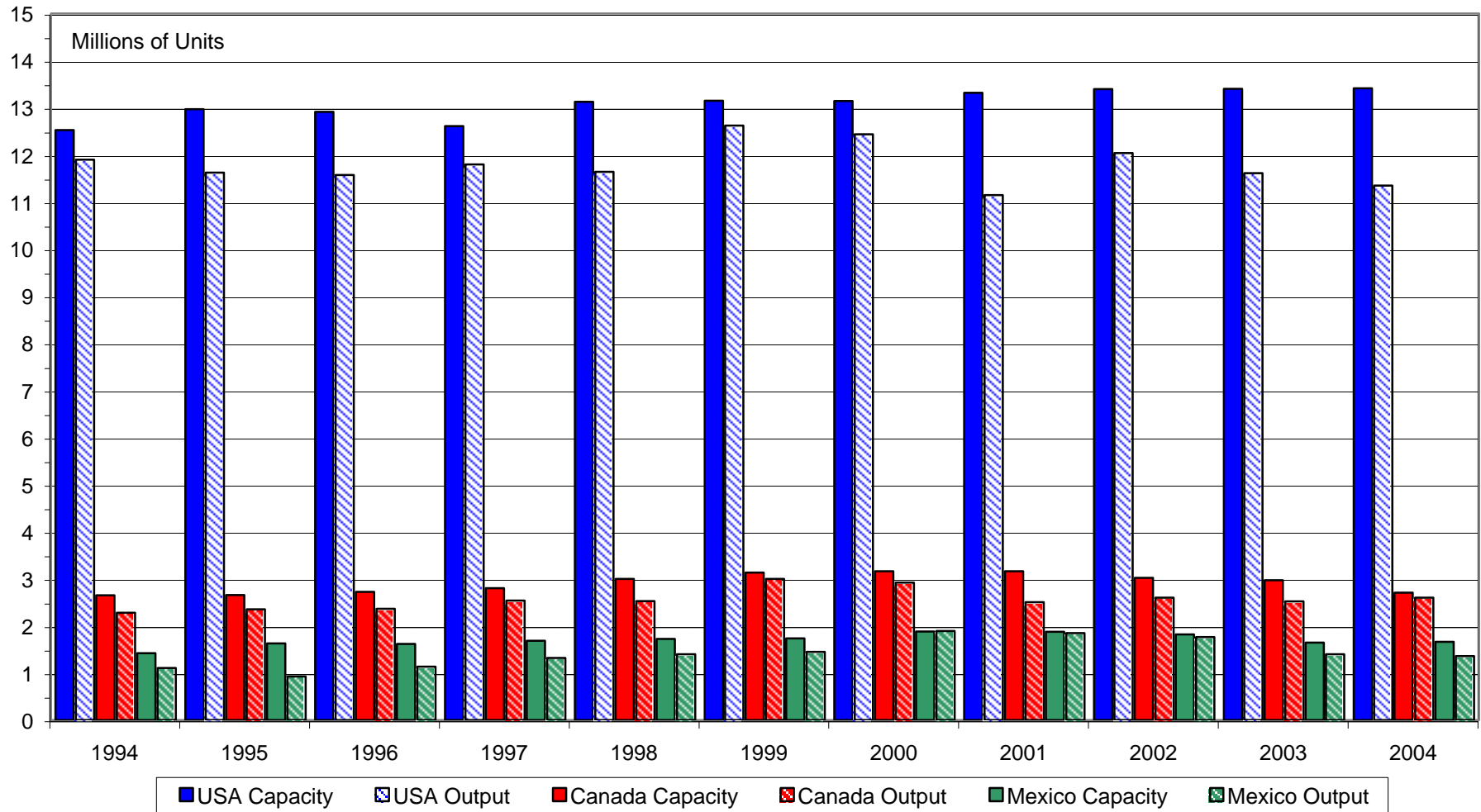
Source: Ward's AutoInfoBank & U.S. Census Bureau, both adjusted by USDOC Office of Aerospace & Automotive Industries

**The U.S. auto trade deficit with both NAFTA and the world decreased in 2005. Exports to both Canada and Mexico increased a total of 7.6%, while imports from Canada increased 1.5% and imports from Mexico decreased 2.2%.**



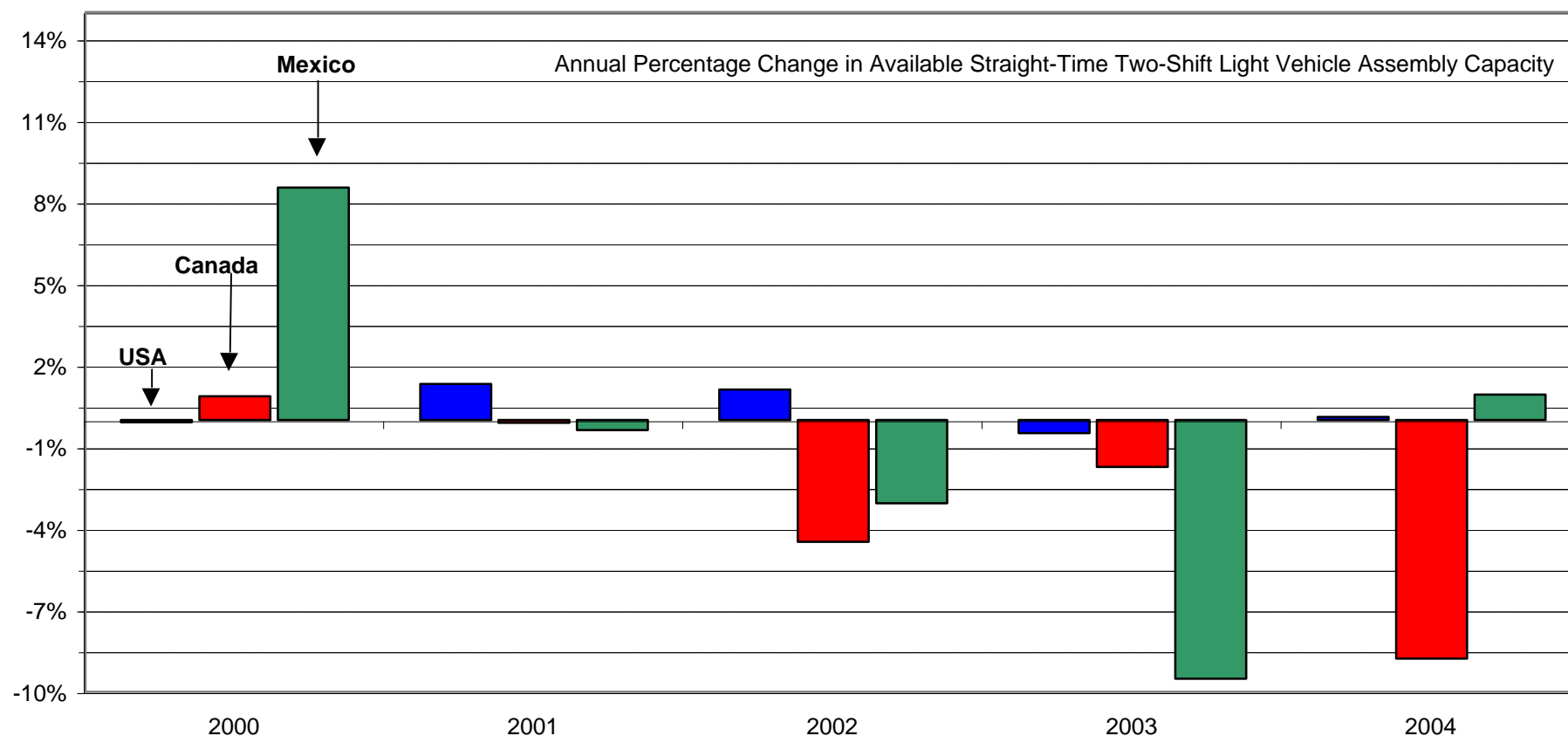
Source: US Census Bureau using USDOC Office of Aerospace & Automotive Industries'

Since 1994, light vehicle assembly capacity has increased in all three countries, growing the fastest in Mexico (31%). The absolute increase in U.S. capacity (813,000 units) was 2.5 times larger than Mexico's 320,000 unit. increase.



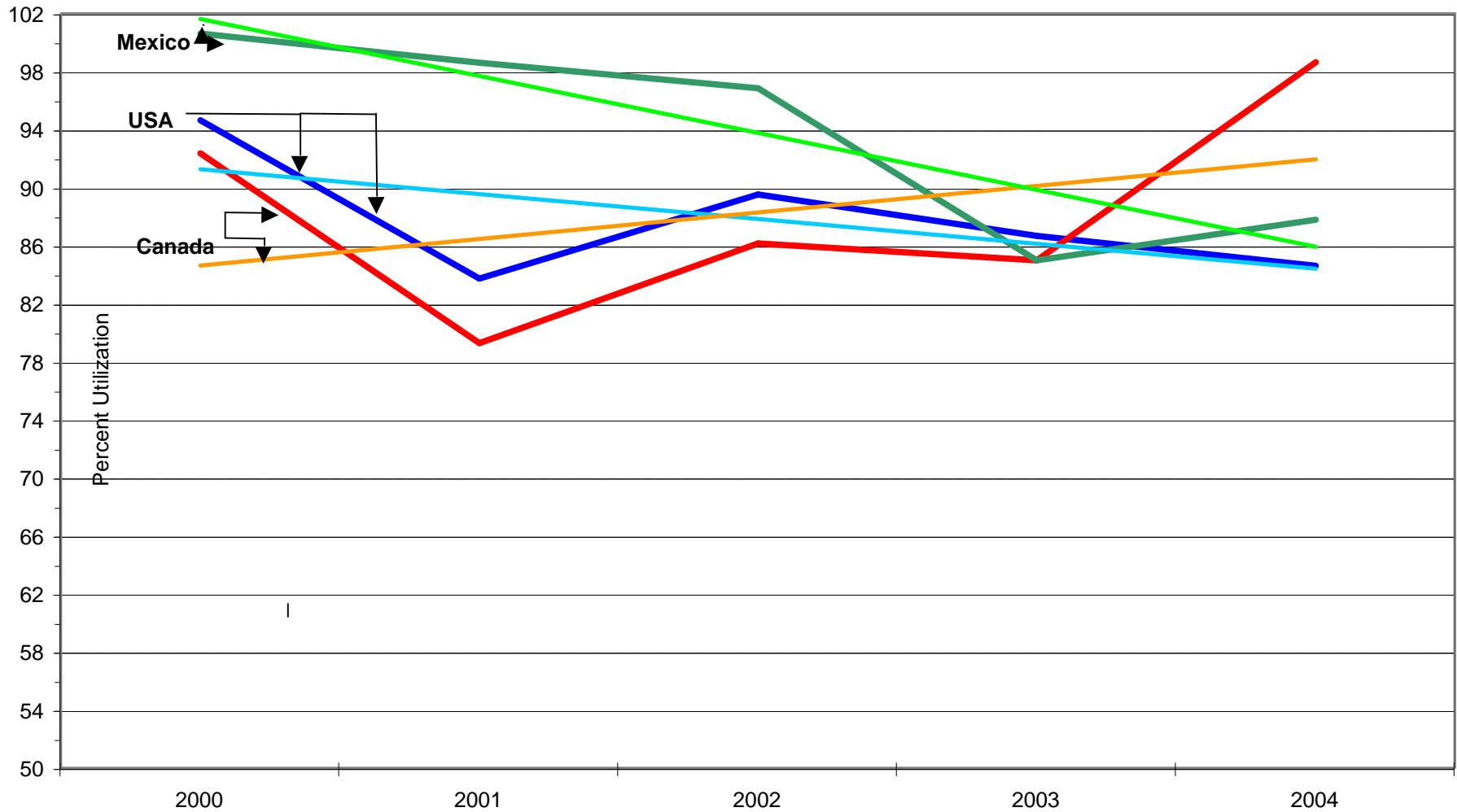
Source: Derived from 1995-2004 Annual Issues of "The Harbour Report" by USDOC Office of Aerospace & Automotive

**Annual available vehicle assembly capacity is a factor of new plants added, old plants closed, crews added, crews eliminated, extra hours, reduced hours, vehicle complexity, plus increases and decreases in assembly line efficiency.**



Source: Derived from 2001-2004 Annual Issues of "The Harbour Report" by  
USDOC Office of Aerospace & Automotive Industries

Over the last five years, capacity utilization rates in the United States and Mexico have seen a gradual decline. Utilization rates in Canada are up substantially. Chart 16



Source: Derived from 2001-2005 Annual Issues of "The Harbour Report" by USDOC Office of Aerospace & Automotive Industries

Chart 17

**U.S. and Canadian production for the Detroit 3 is down since NAFTA was signed. While Mexico production is up for the group, their share of NAFTA production has steadily declined.**

